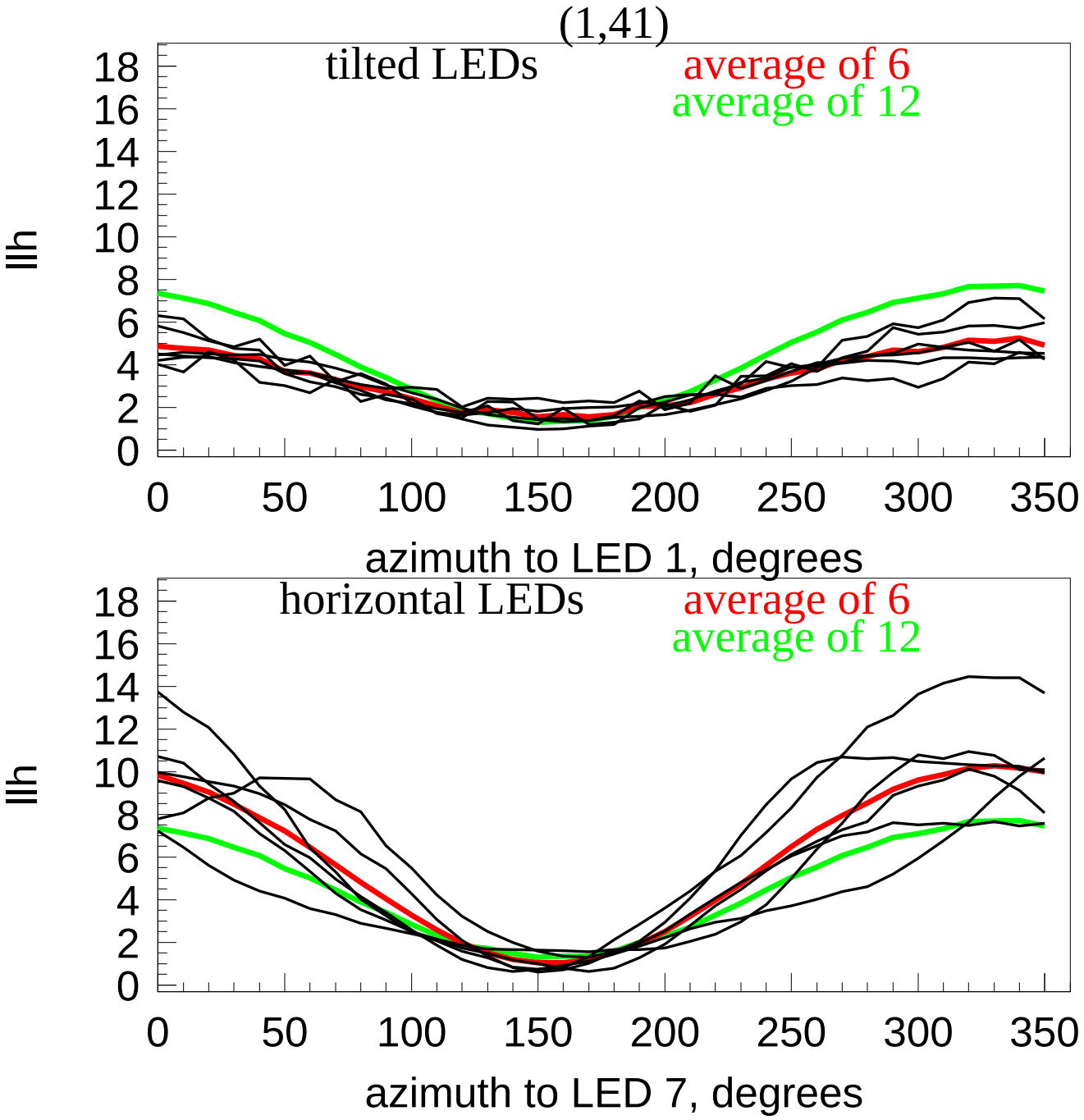
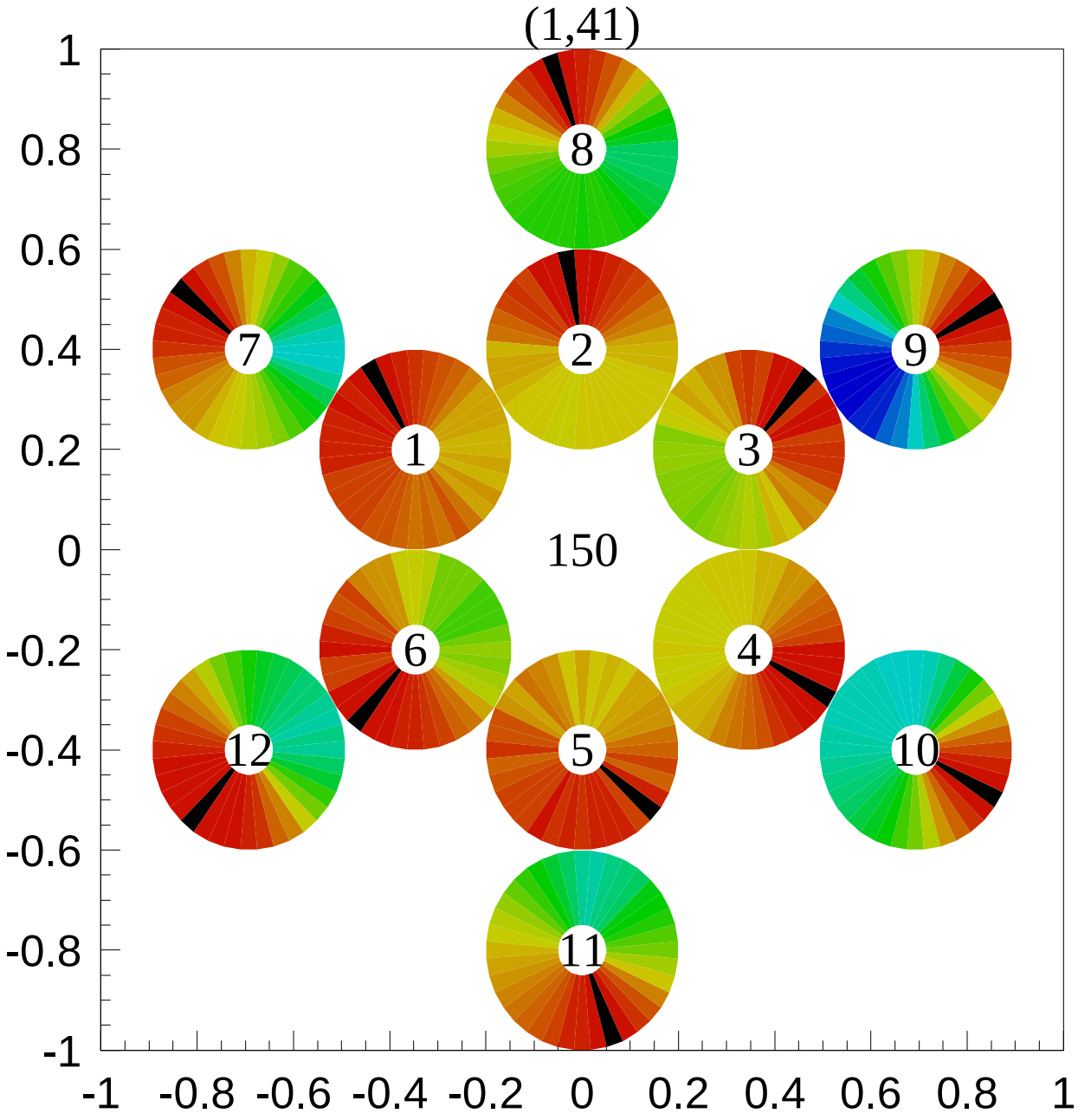
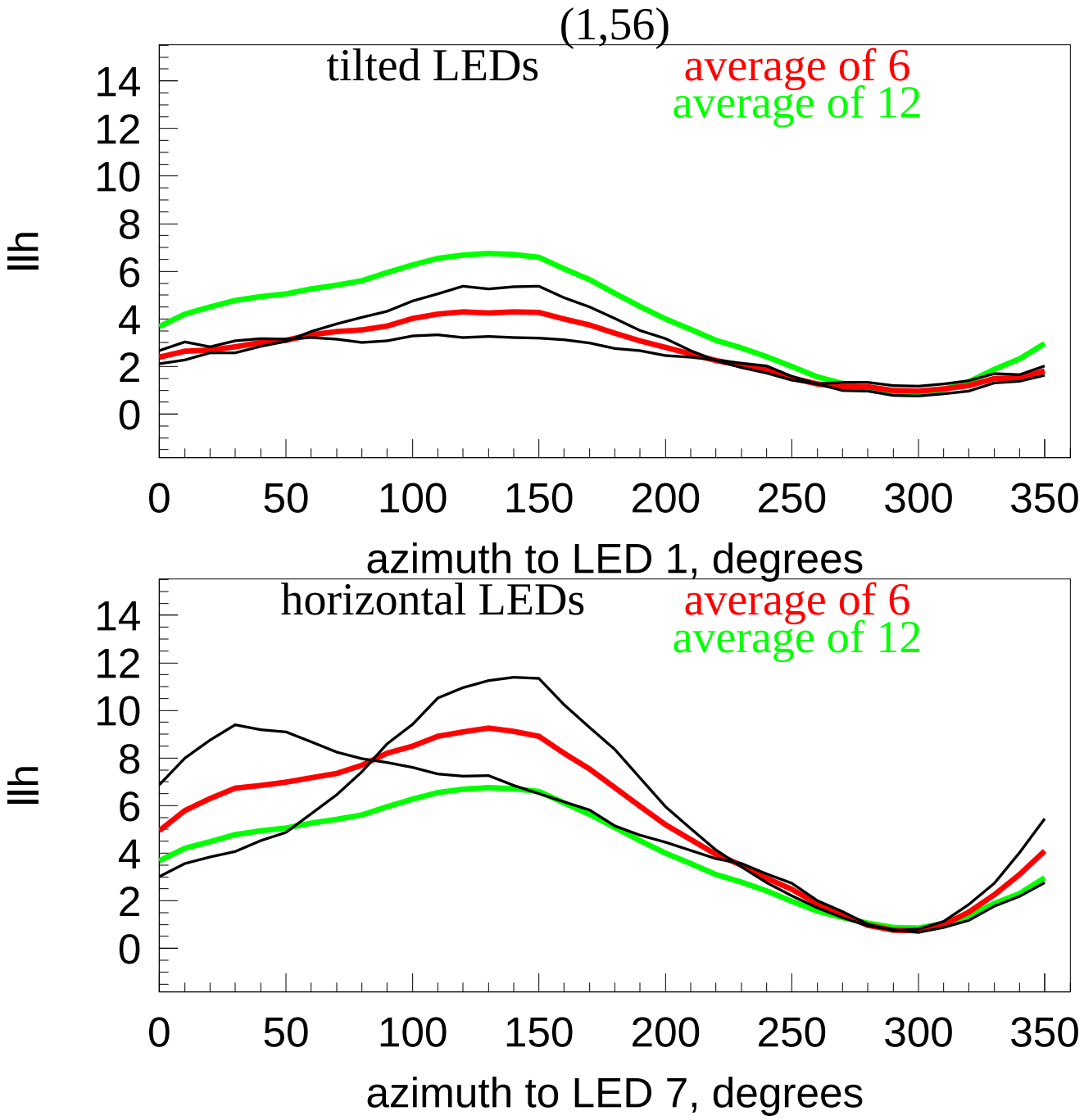
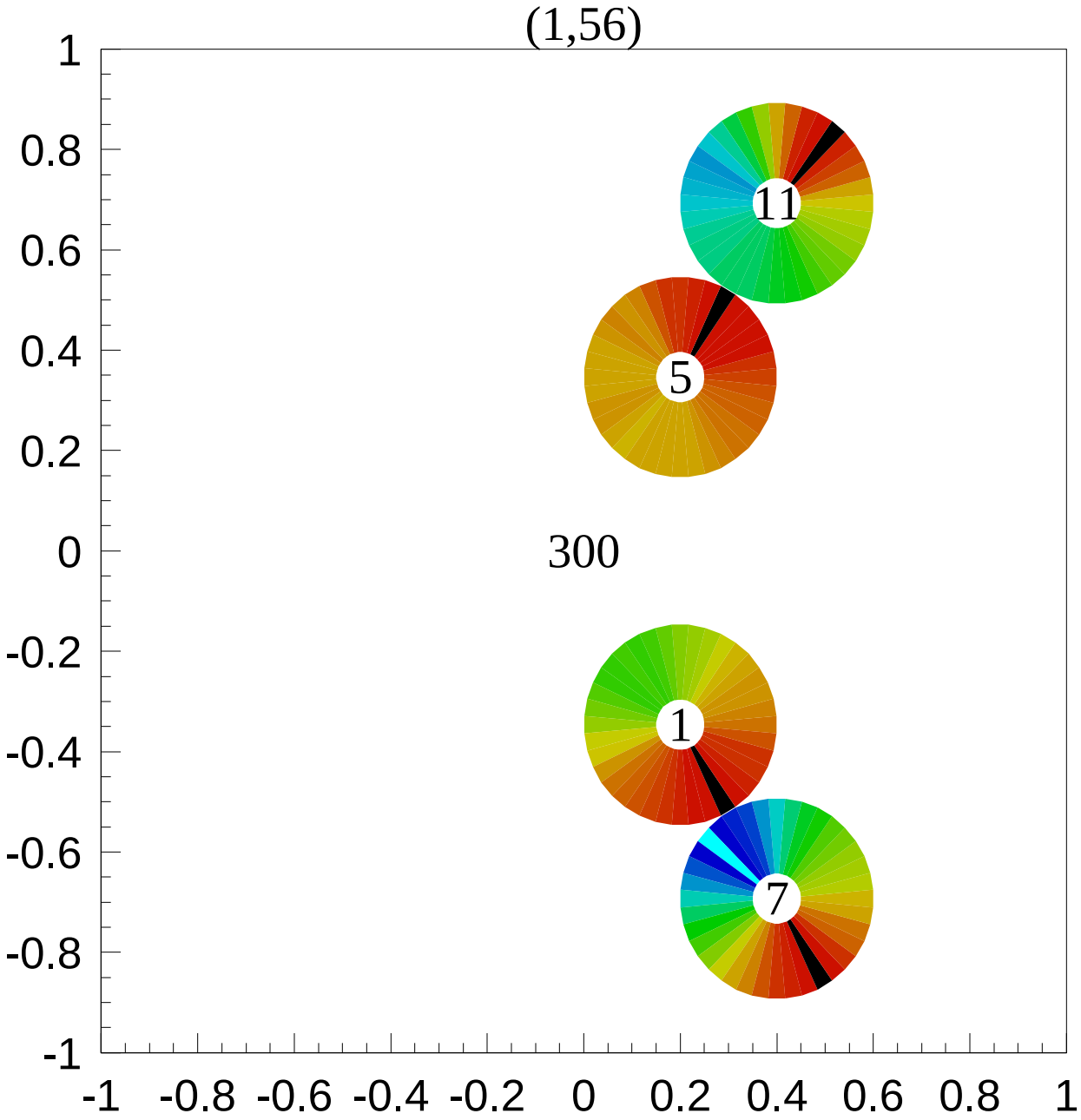
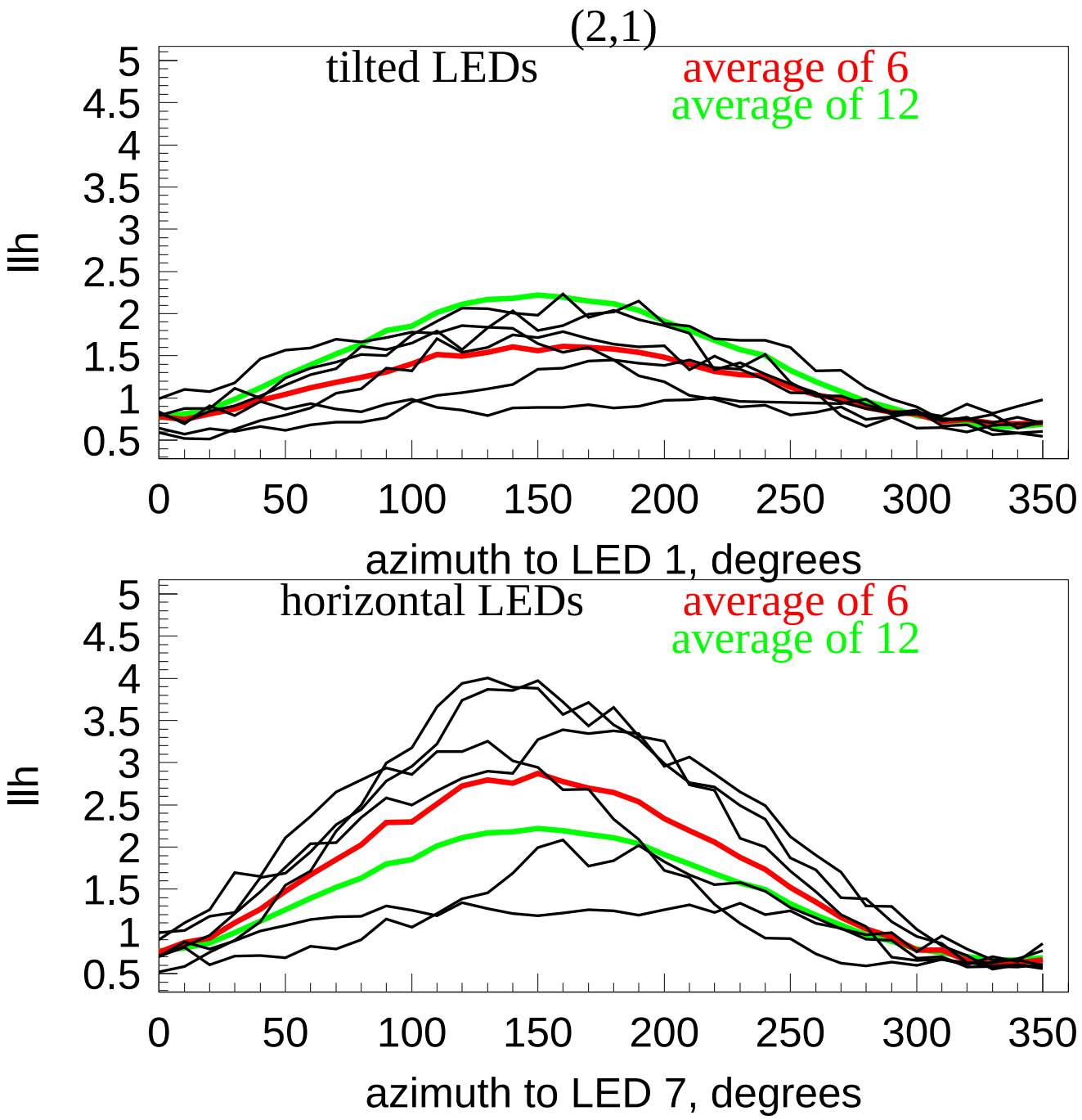
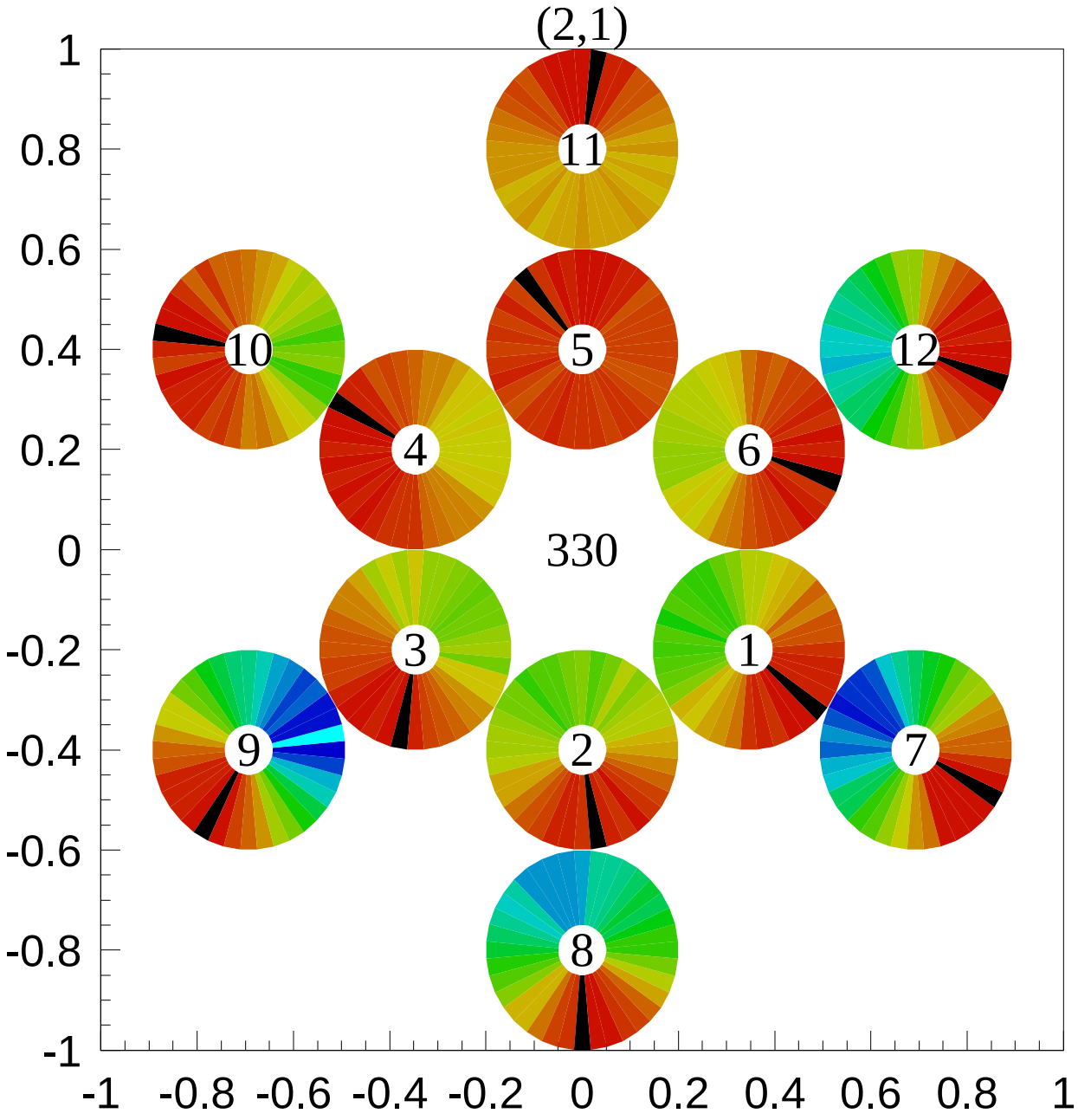

(1,41)
tilted LEDs
average of 6
average of 12
Ilh
18
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
18
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

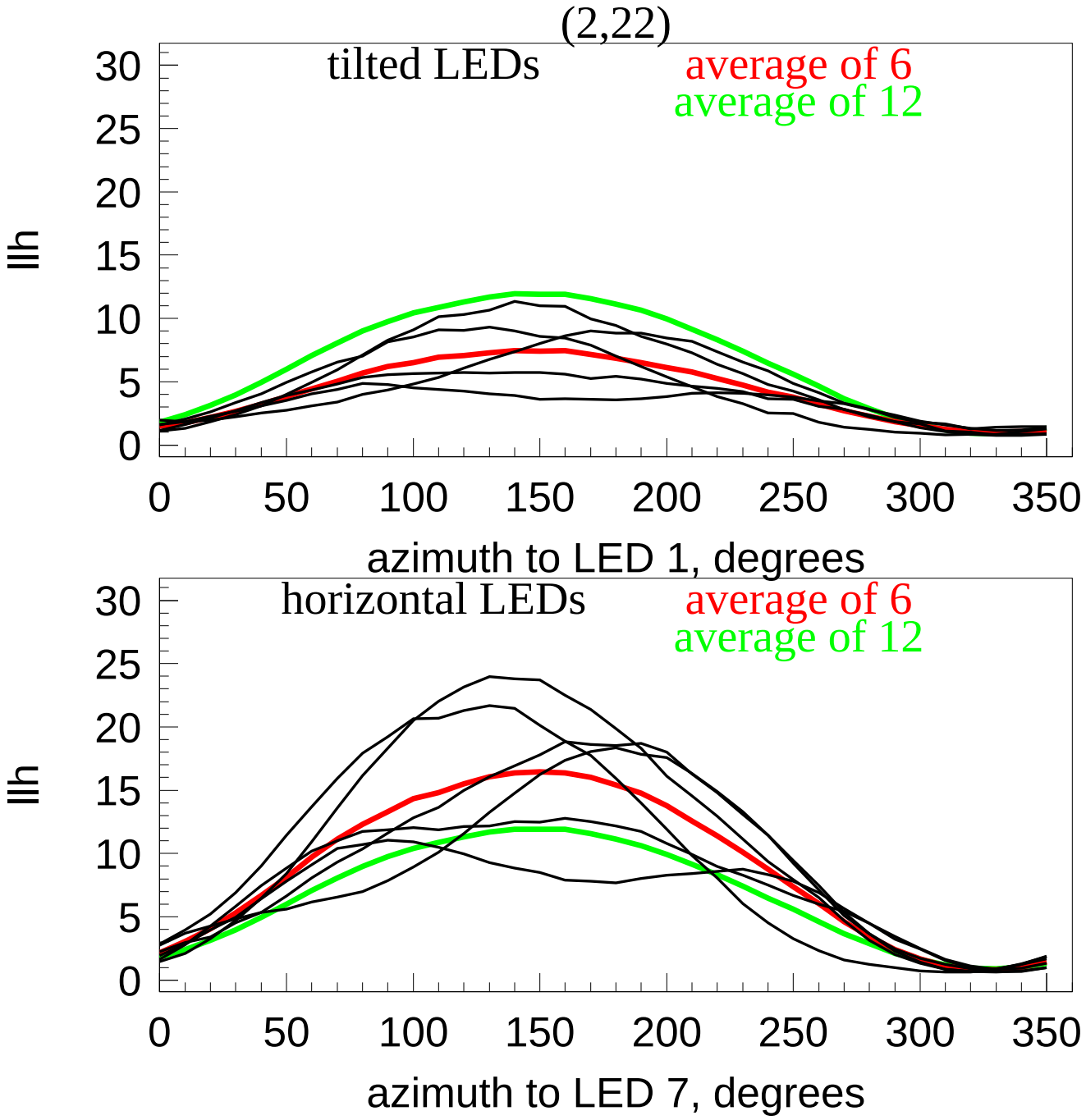

(1,41)
8
7
2
9
1
3
150
6
4
12
5
10
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

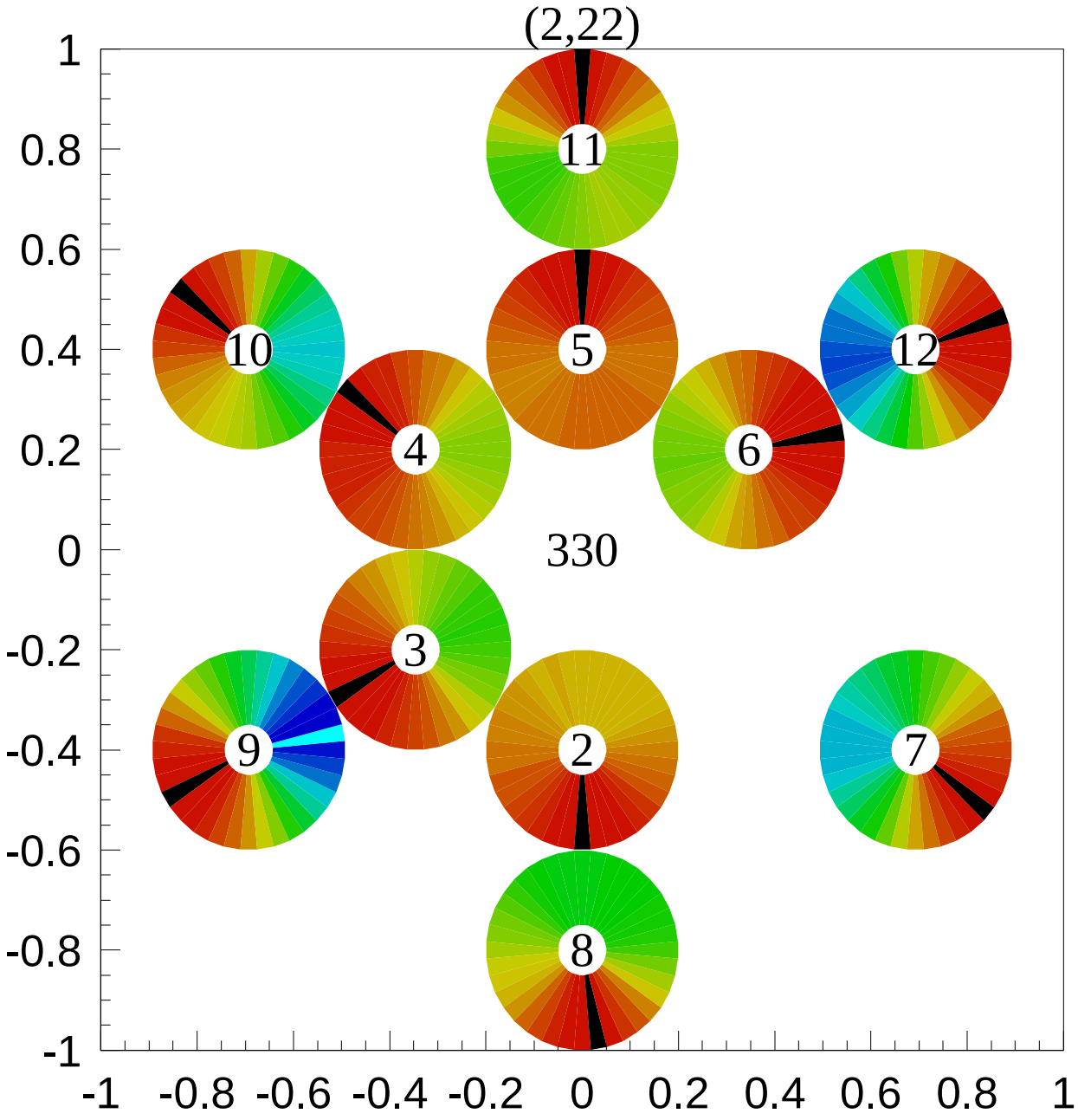

(1,56)
tilted LEDs
average of 6
average of 12
llh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

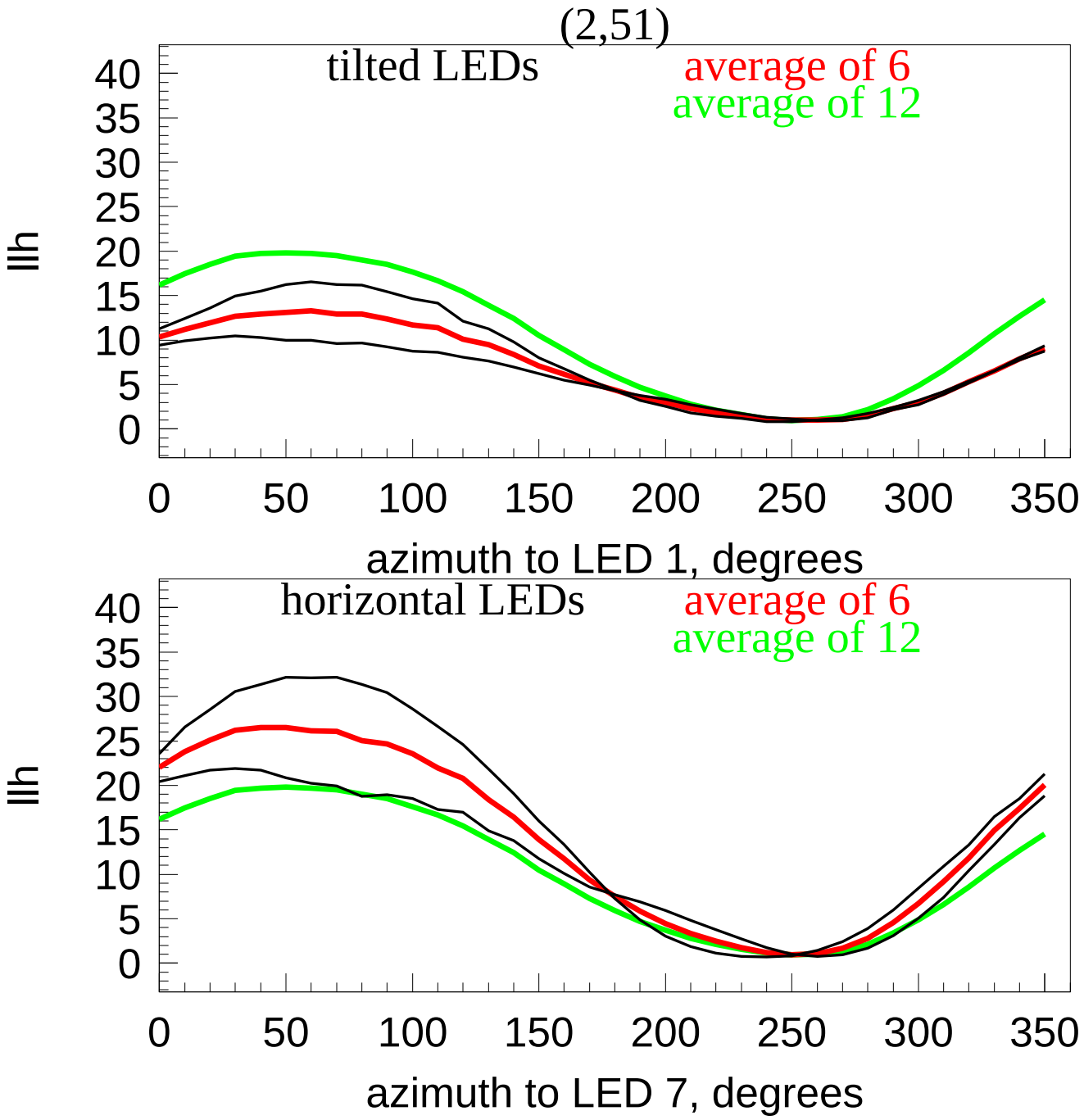

(1,56)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1 -0.8 -0.6 -0.4 -0.2 0 0.2 0.4 0.6 0.8 1
11
5
300
1
7

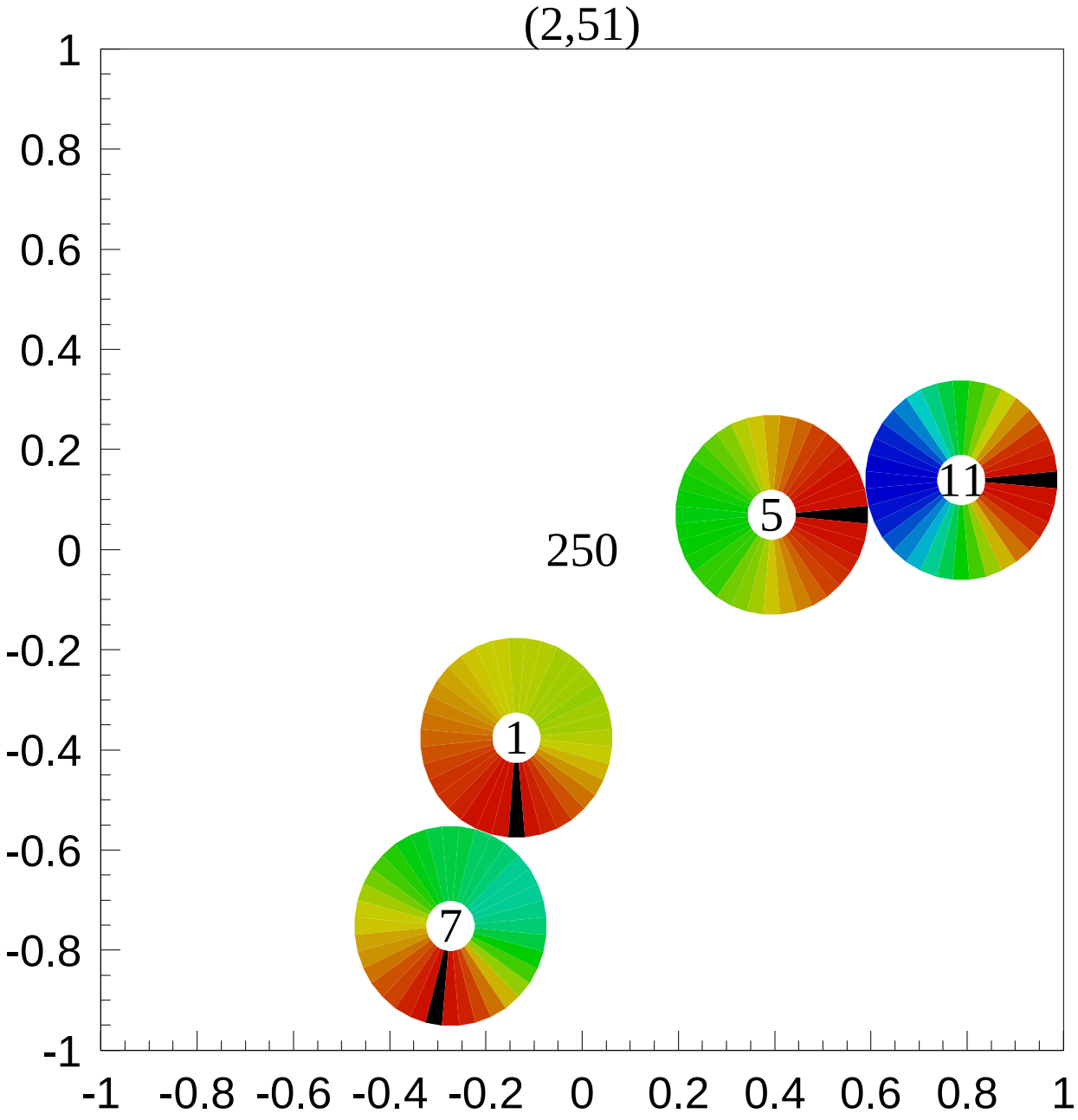

(2,1)
tilted LEDs
average of 6
average of 12
Ilh
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

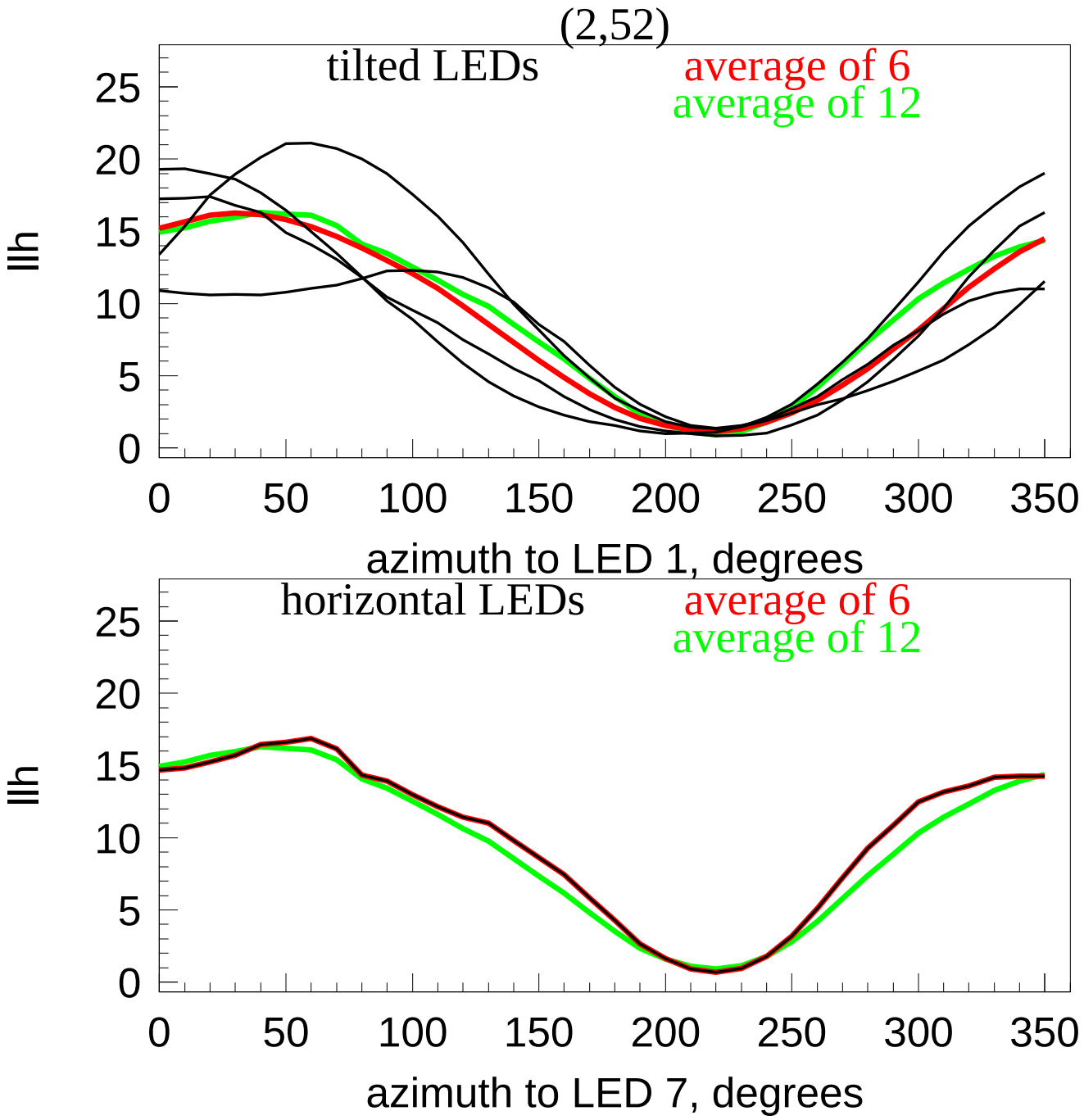

(2,1)
11
10
5
12
4
6
330
3
1
9
2
7
8
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

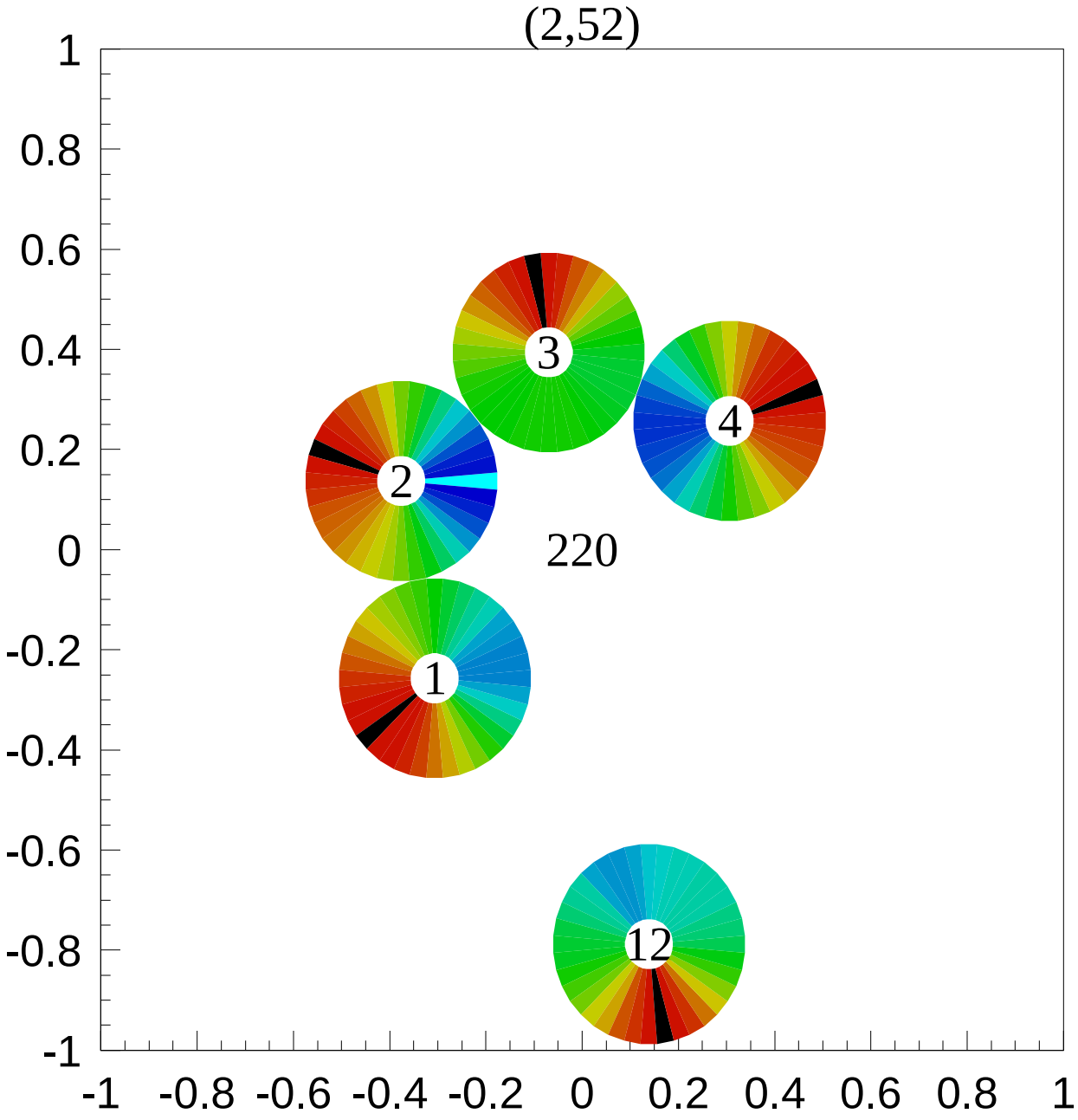

(2,22)
tilted LEDs
average of 6
average of 12
IIh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
IIh
azimuth to LED 7, degrees

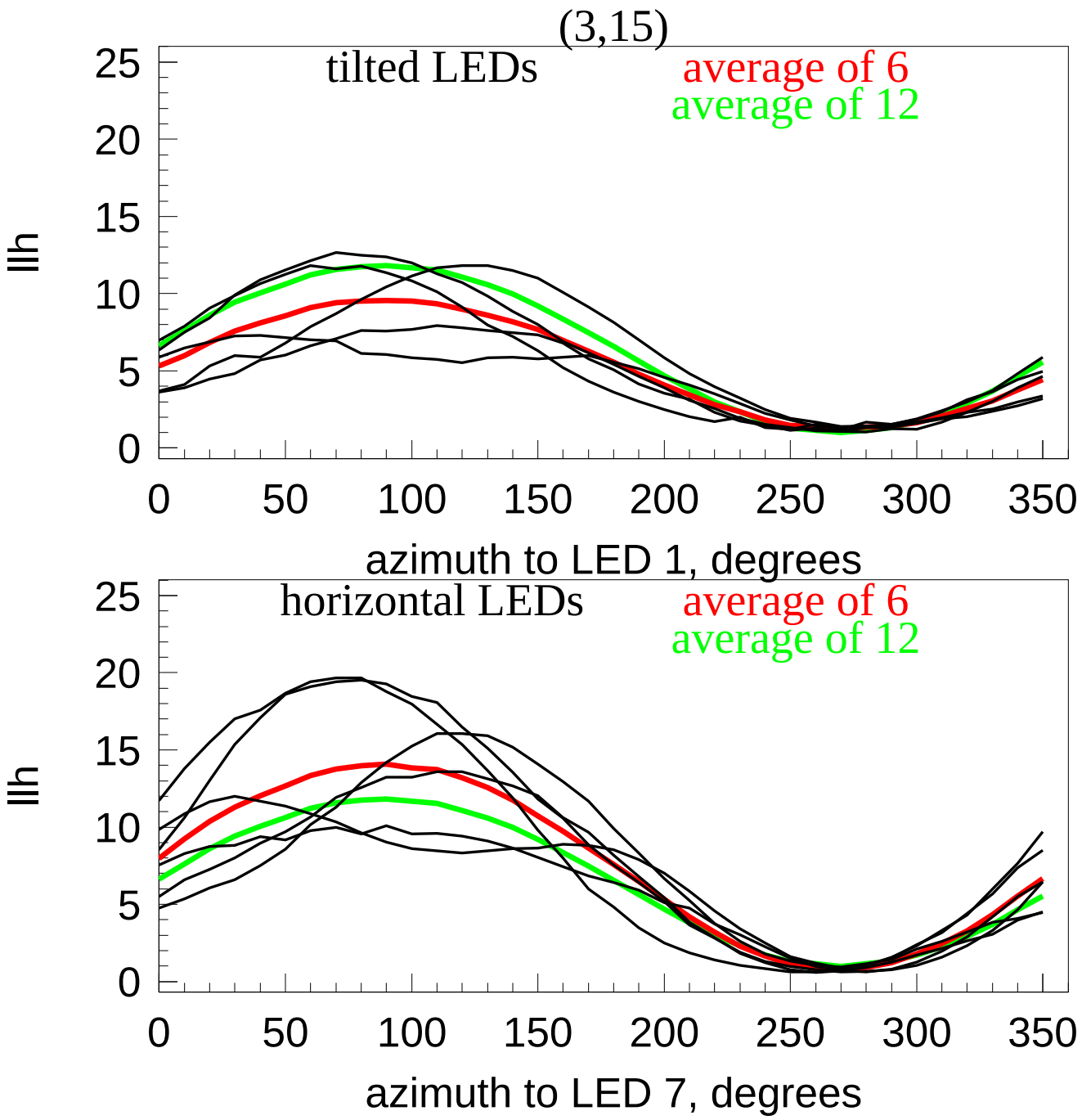

(2,22)
11
10
5
12
4
6
330
3
9
2
7
8
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

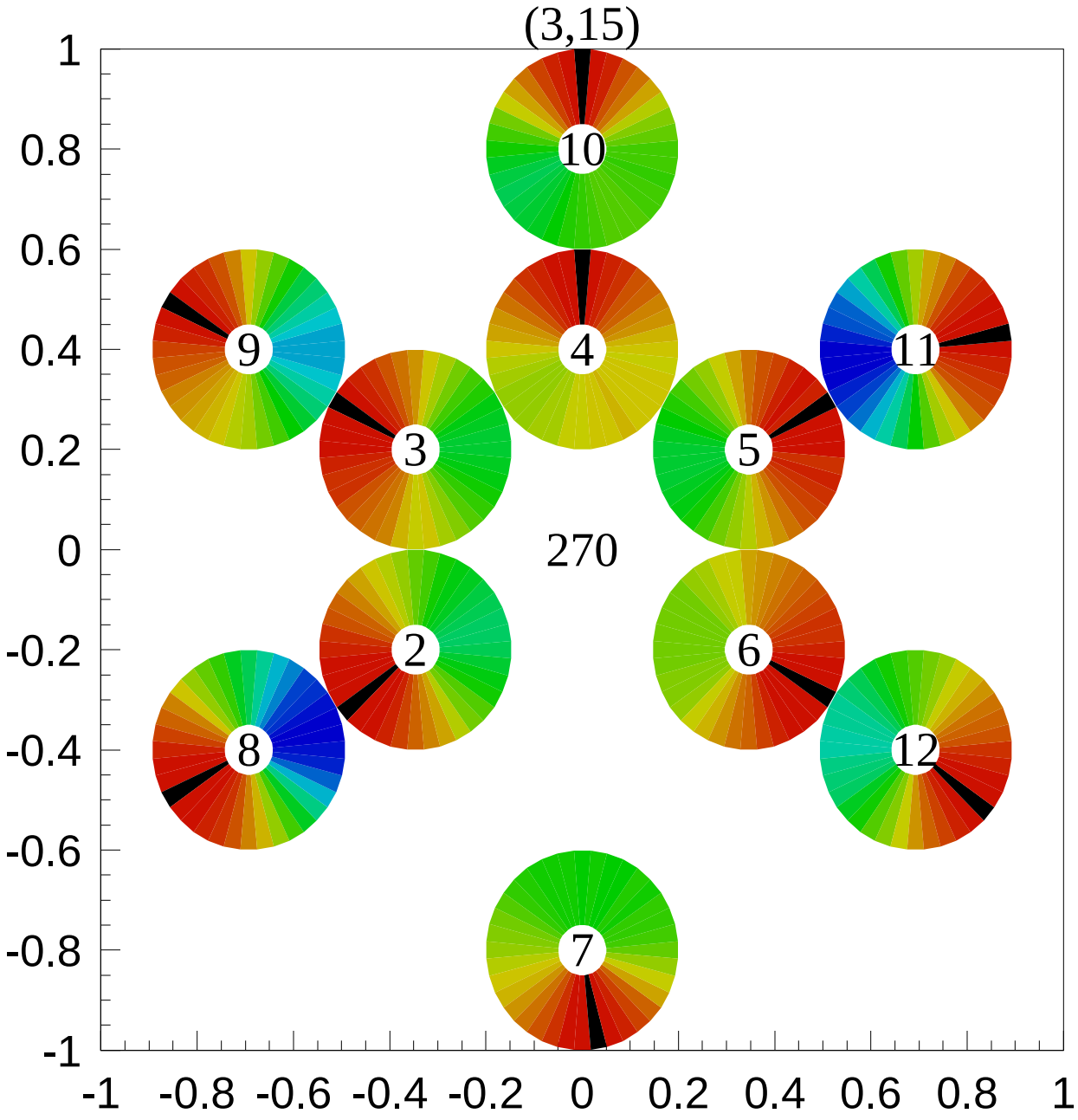

(2,51)
tilted LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

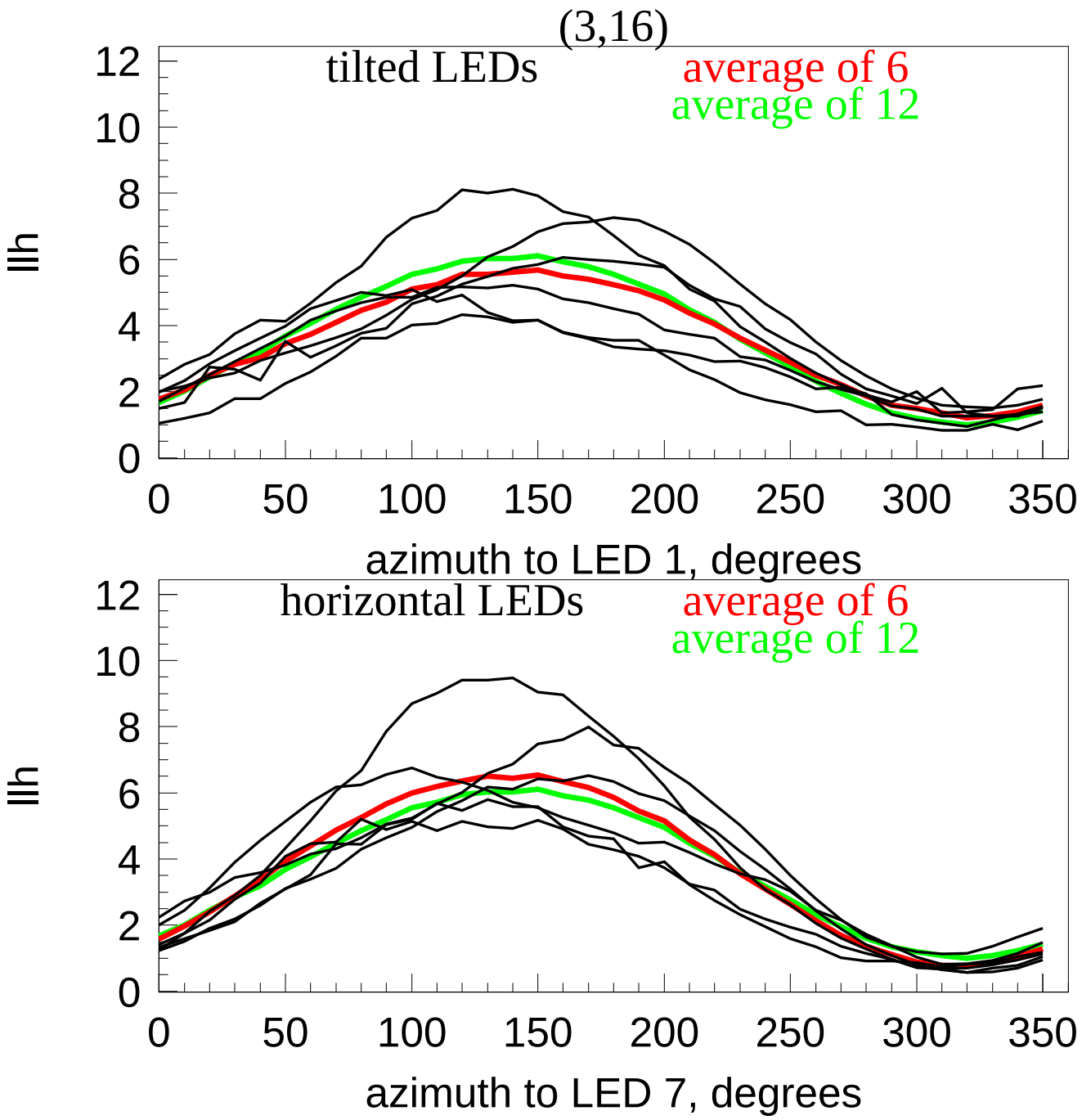

(2,51)
250
1
5
7
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

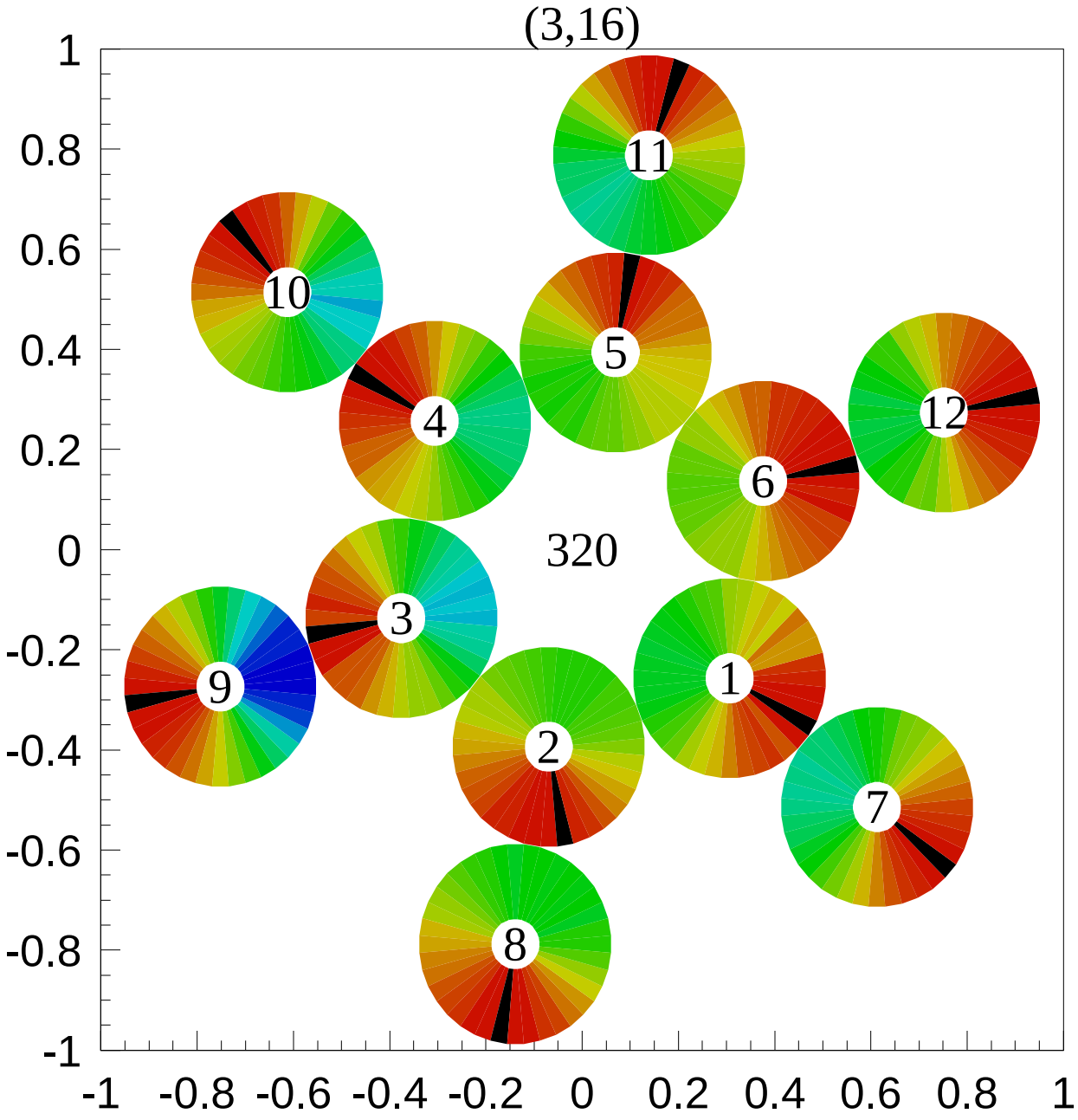

(2,52)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

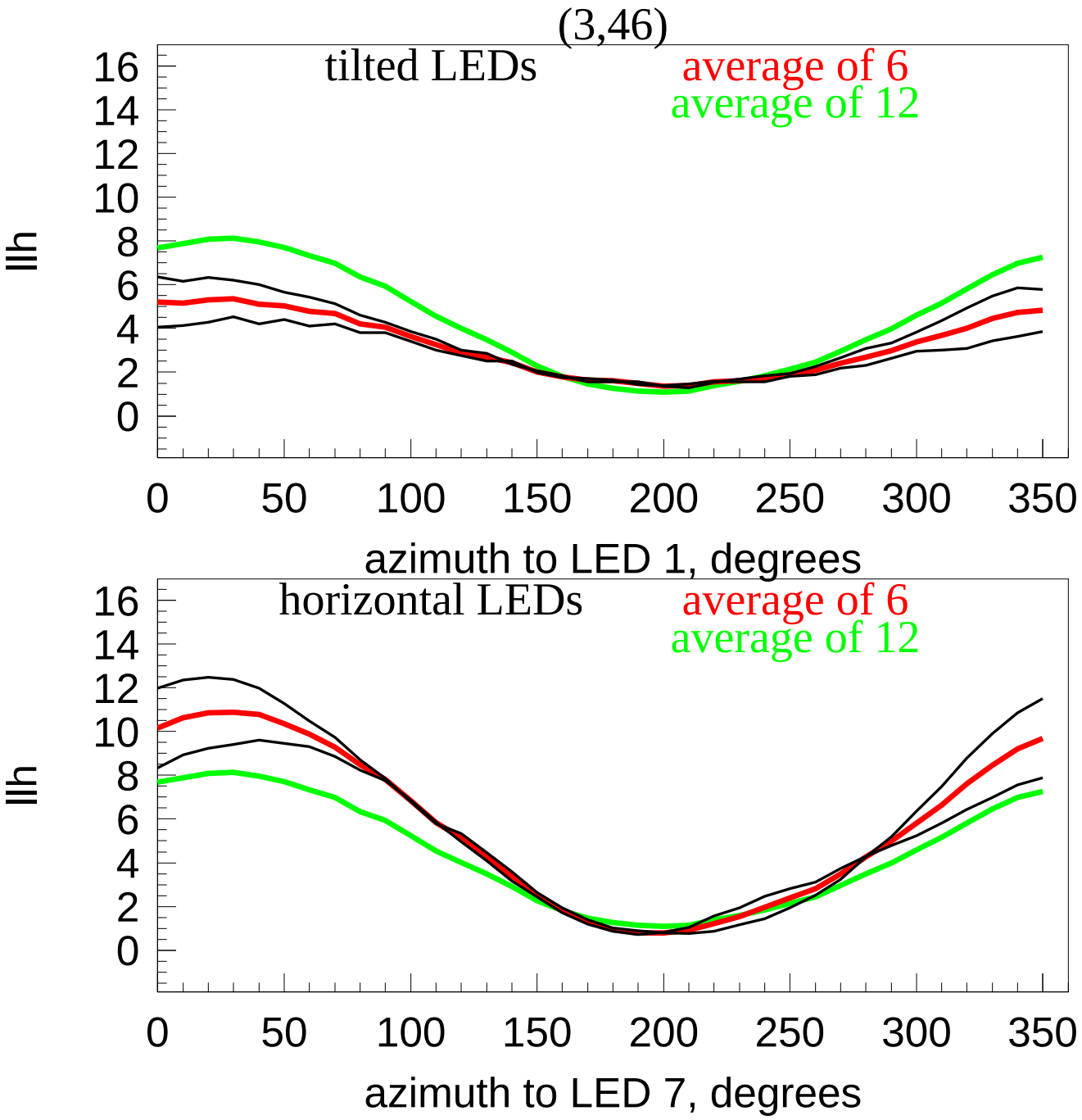

(2,52)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
3
4
2
220
1
12

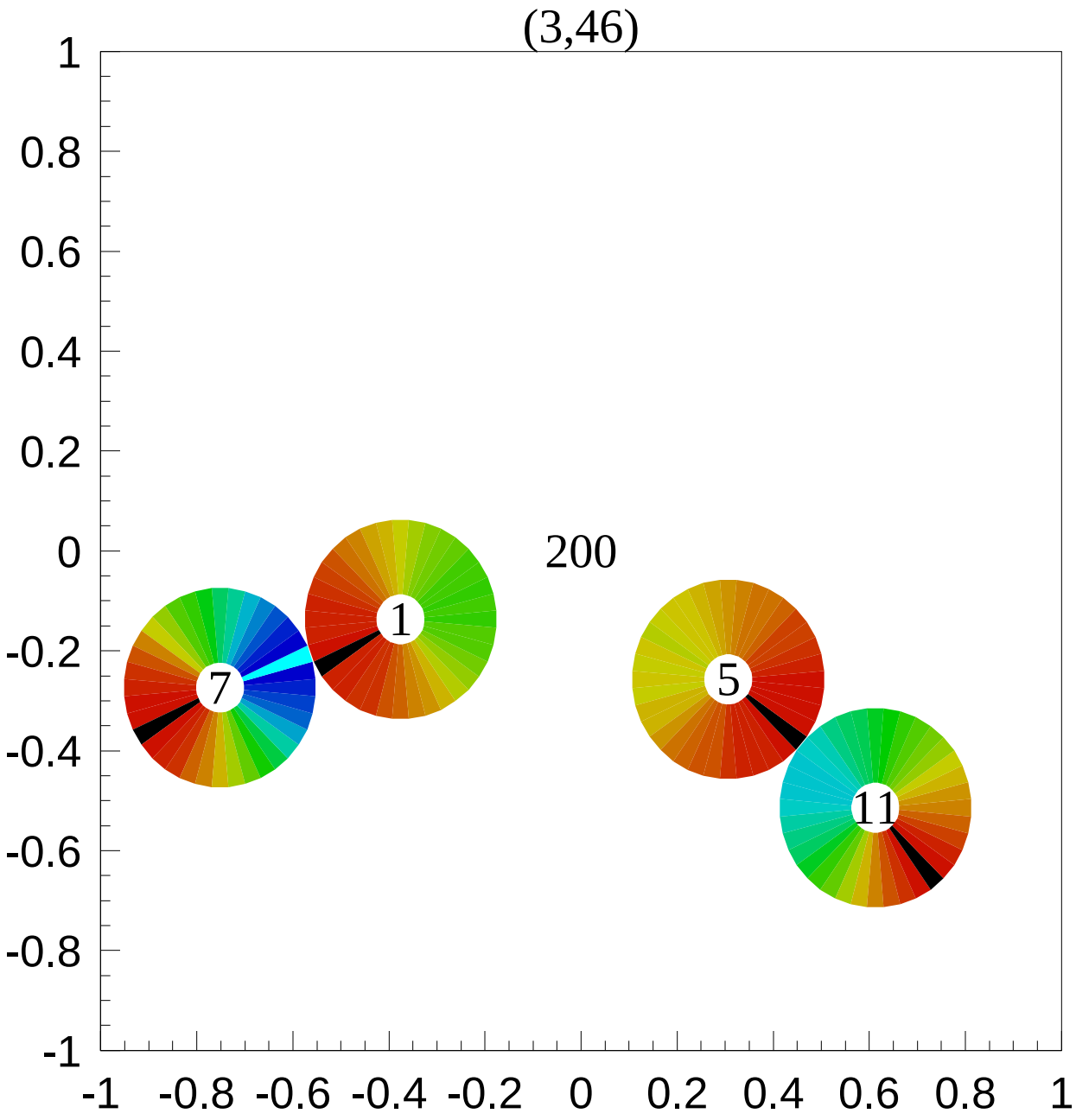

(3,15)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

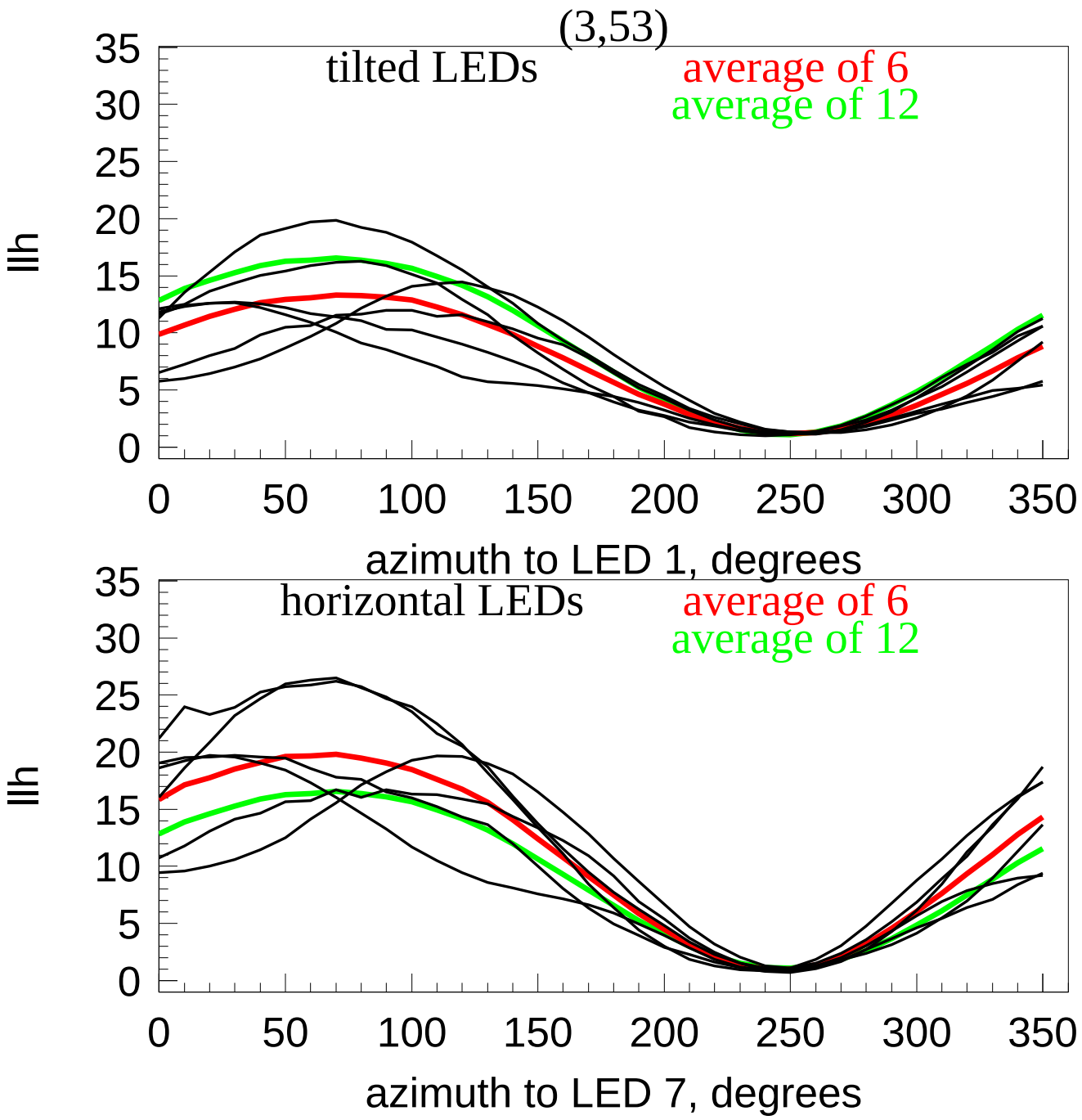

(3,15)
10
9
4
11
3
5
270
2
6
8
12
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

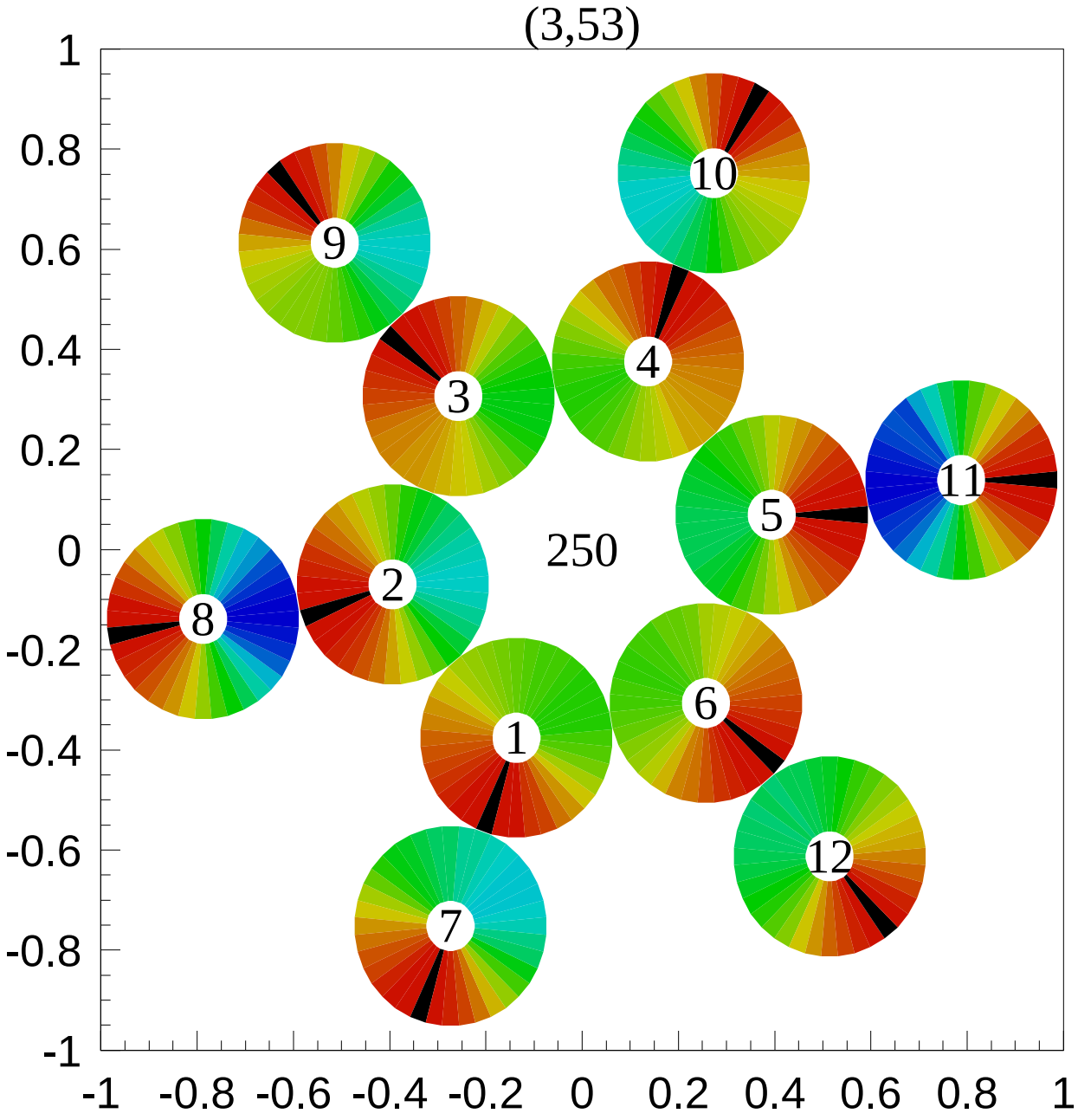

(3,16)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

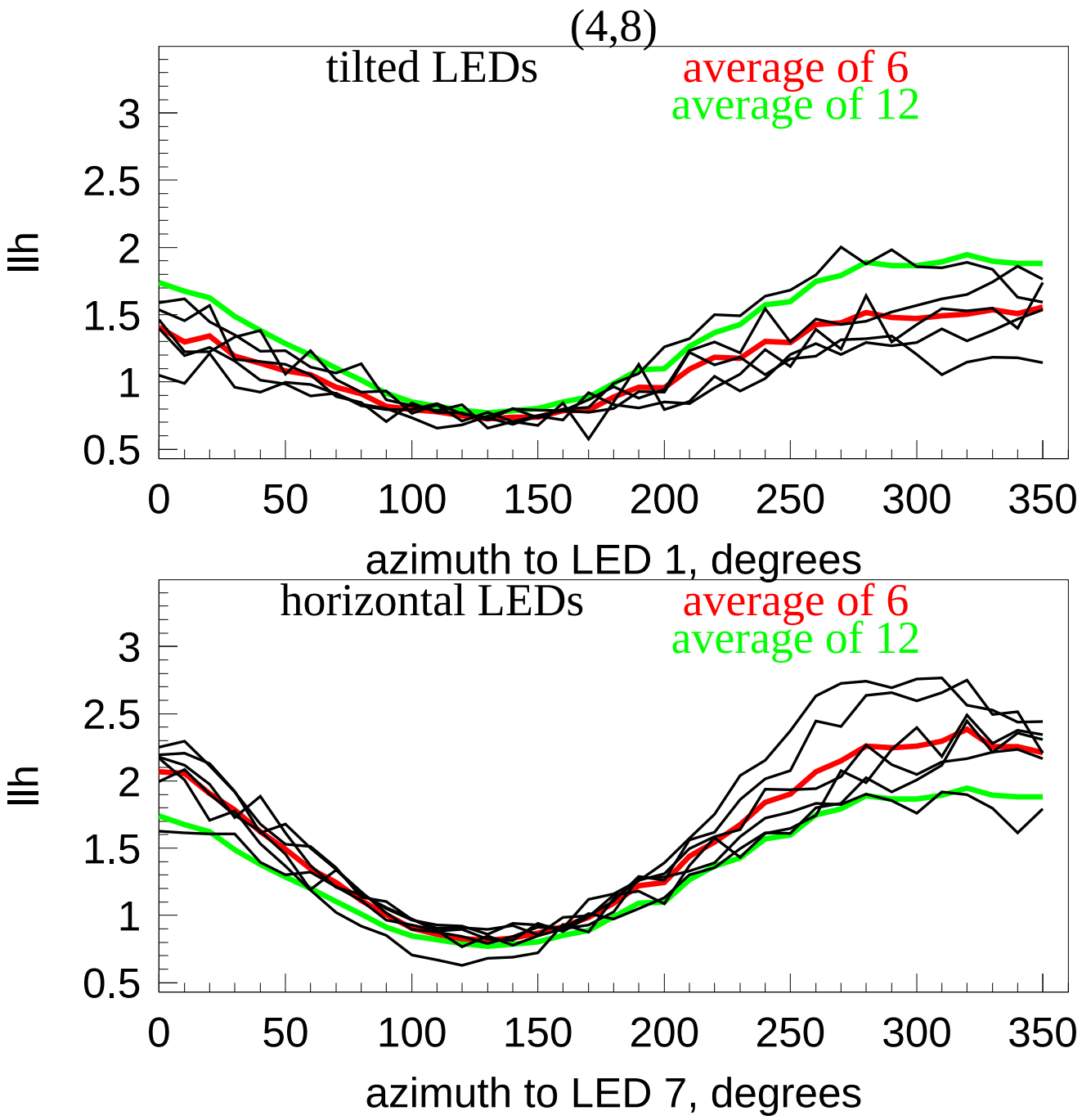

(3,16)
11
10
5
4
12
6
320
3
9
1
2
7
8
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

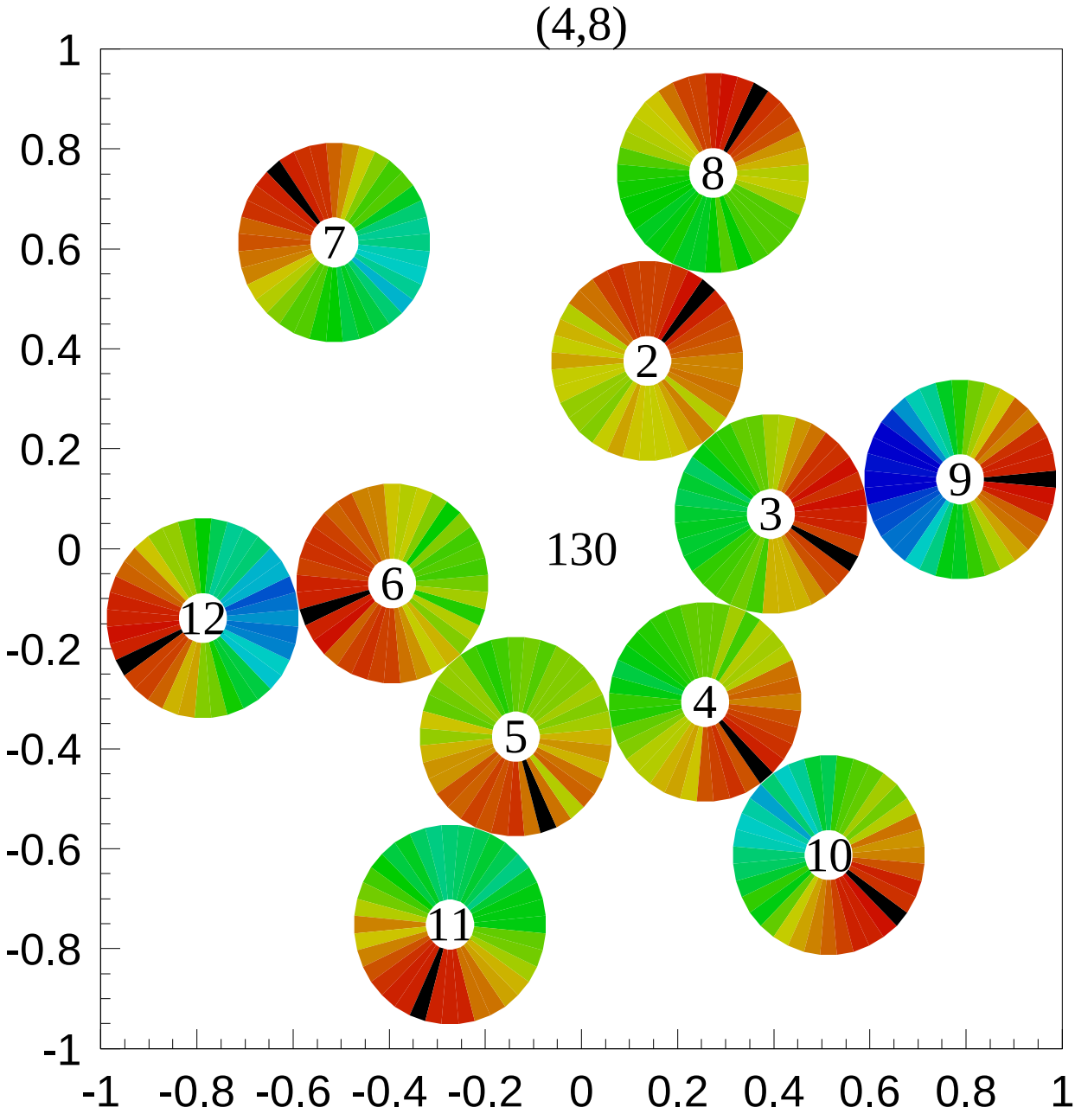

(3,46)
tilted LEDs
average of 6
average of 12
llh
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

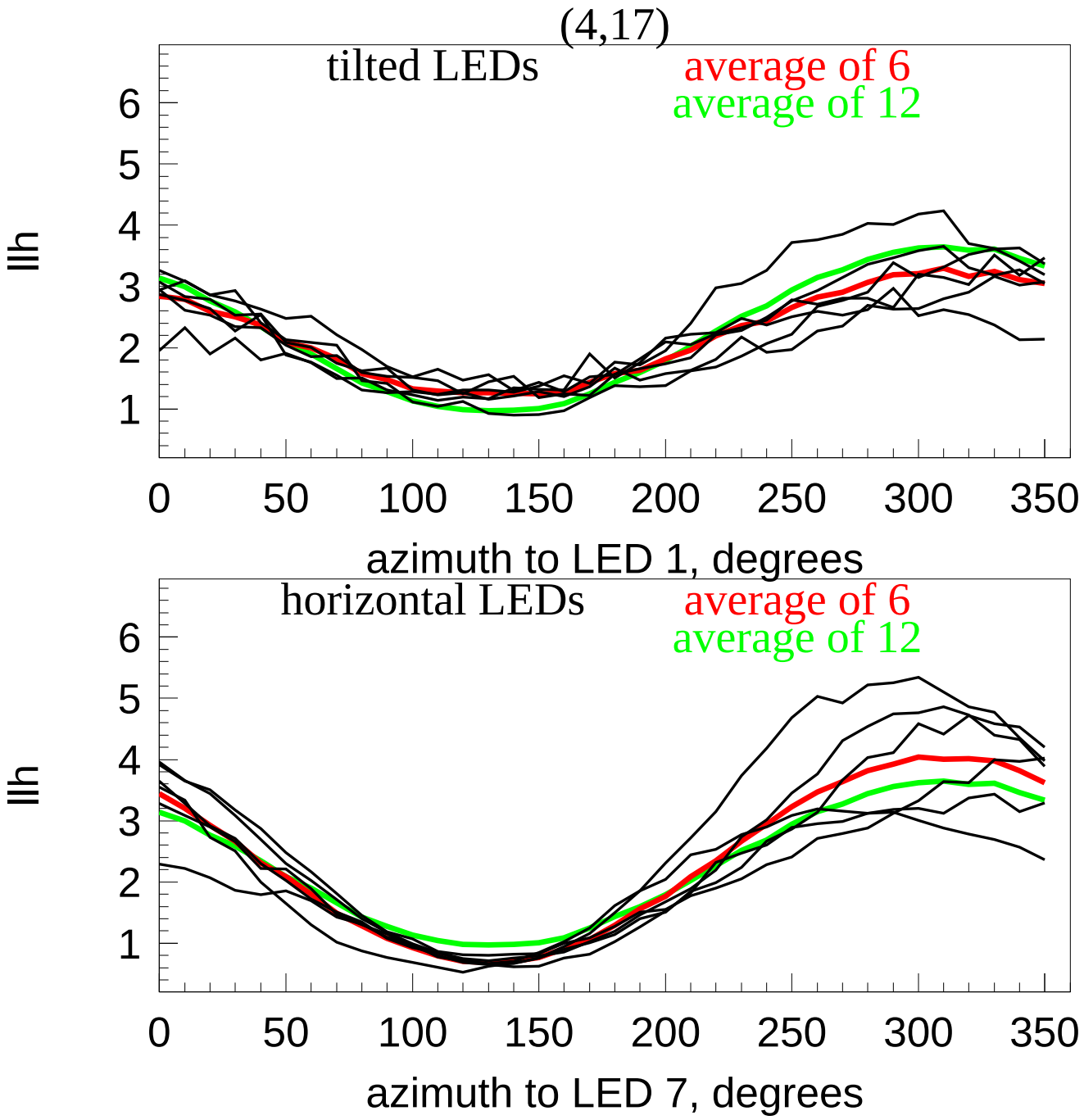

(3,46)
200
1
7
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

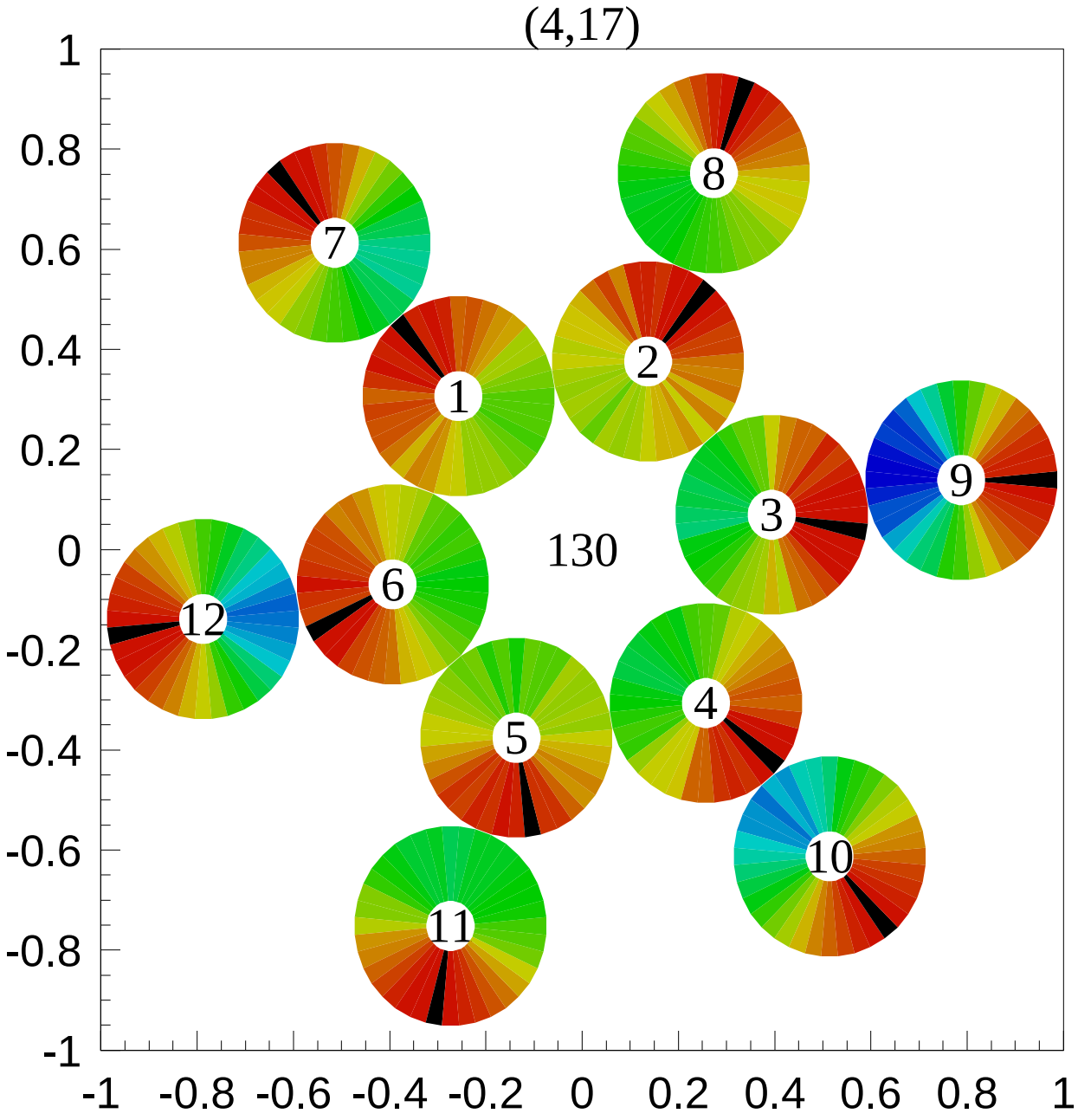

(3,53)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees
0
5
10
15
20
25
30
35
0
50
100
150
200
250
300
350

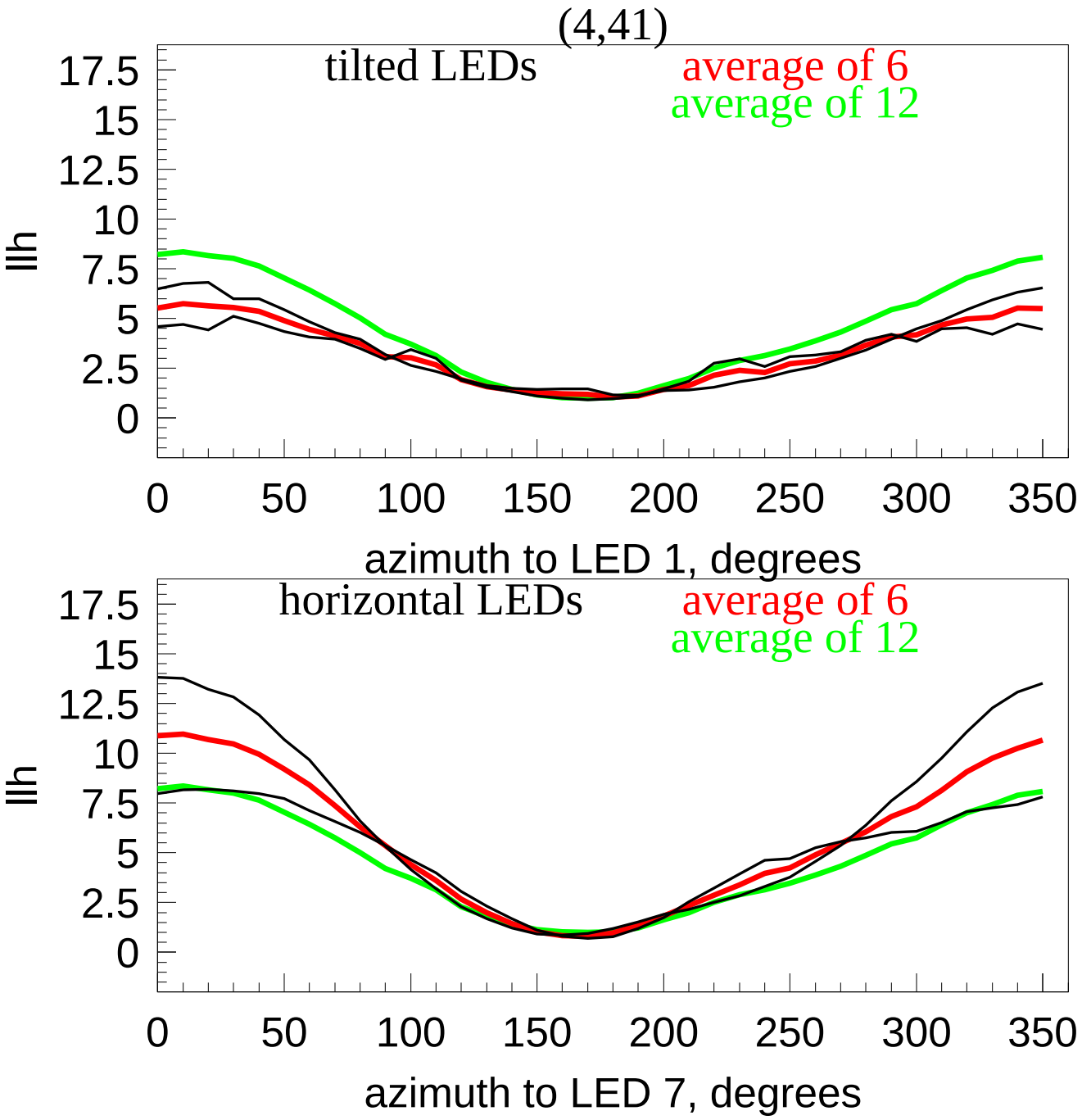

(3,53)
250
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

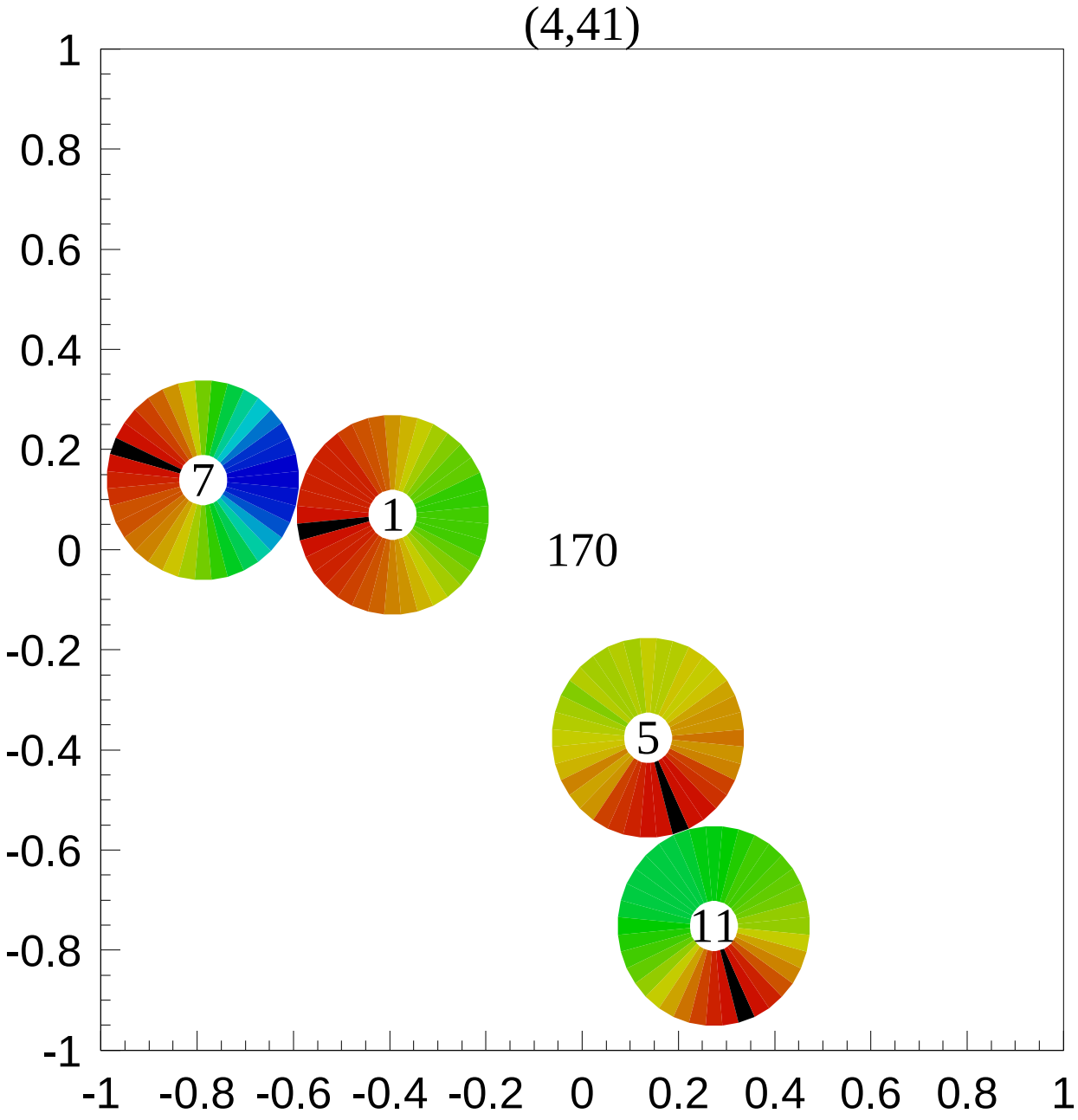

(4,8)
tilted LEDs
average of 6
average of 12
Ilh
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

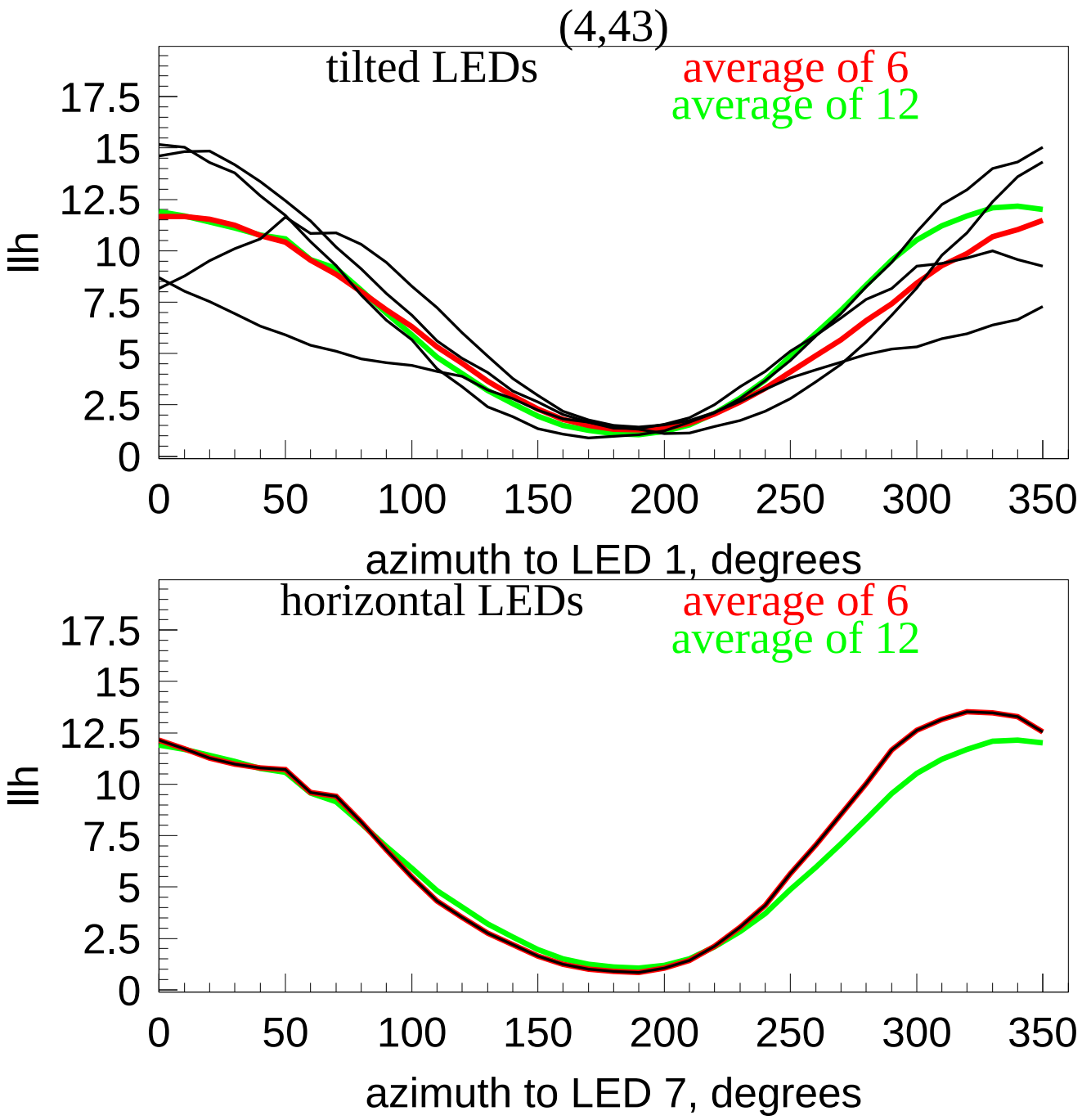

(4,8)
130
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
2
9
3
6
12
5
4
10
11

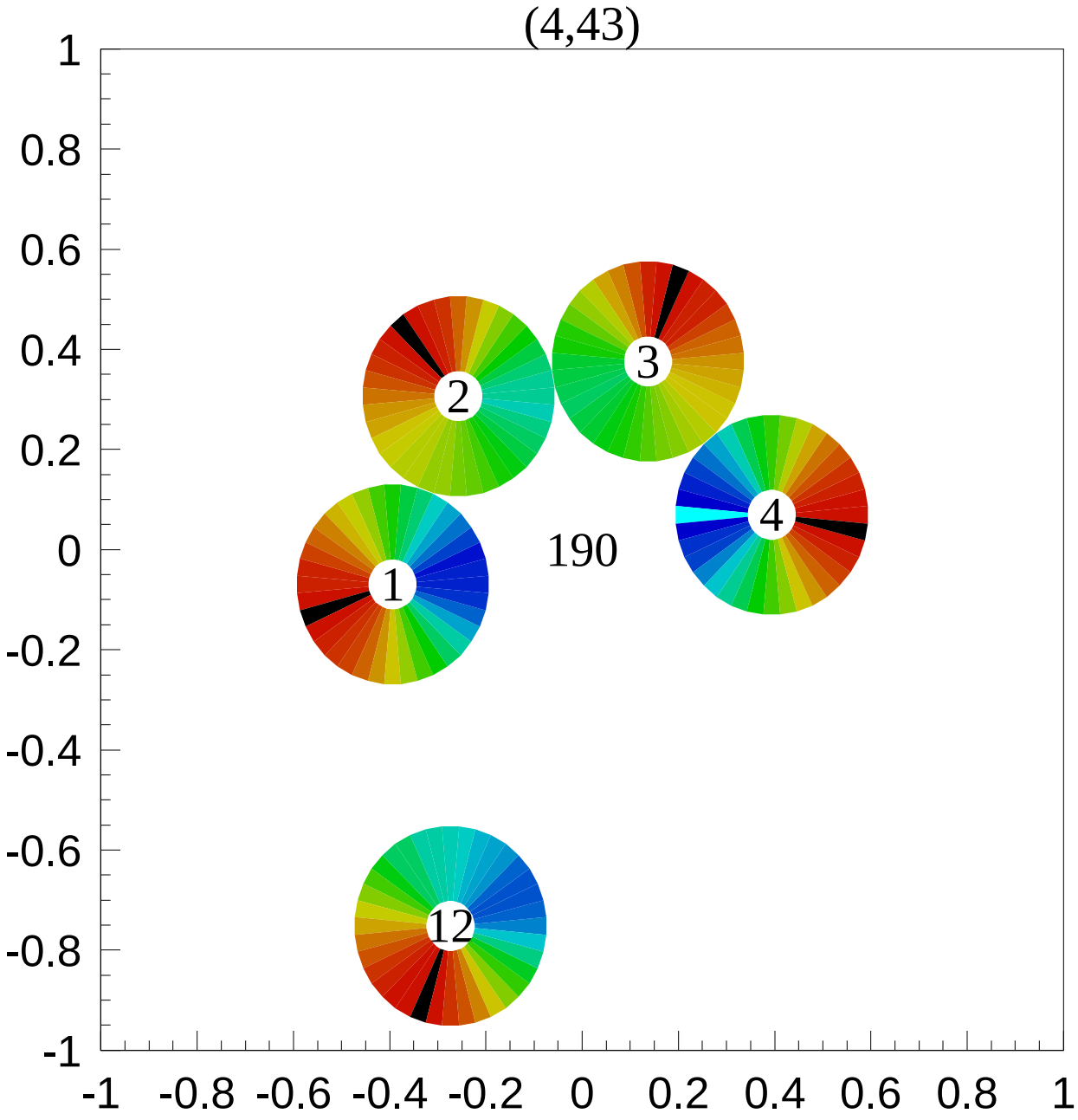

(4,17)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

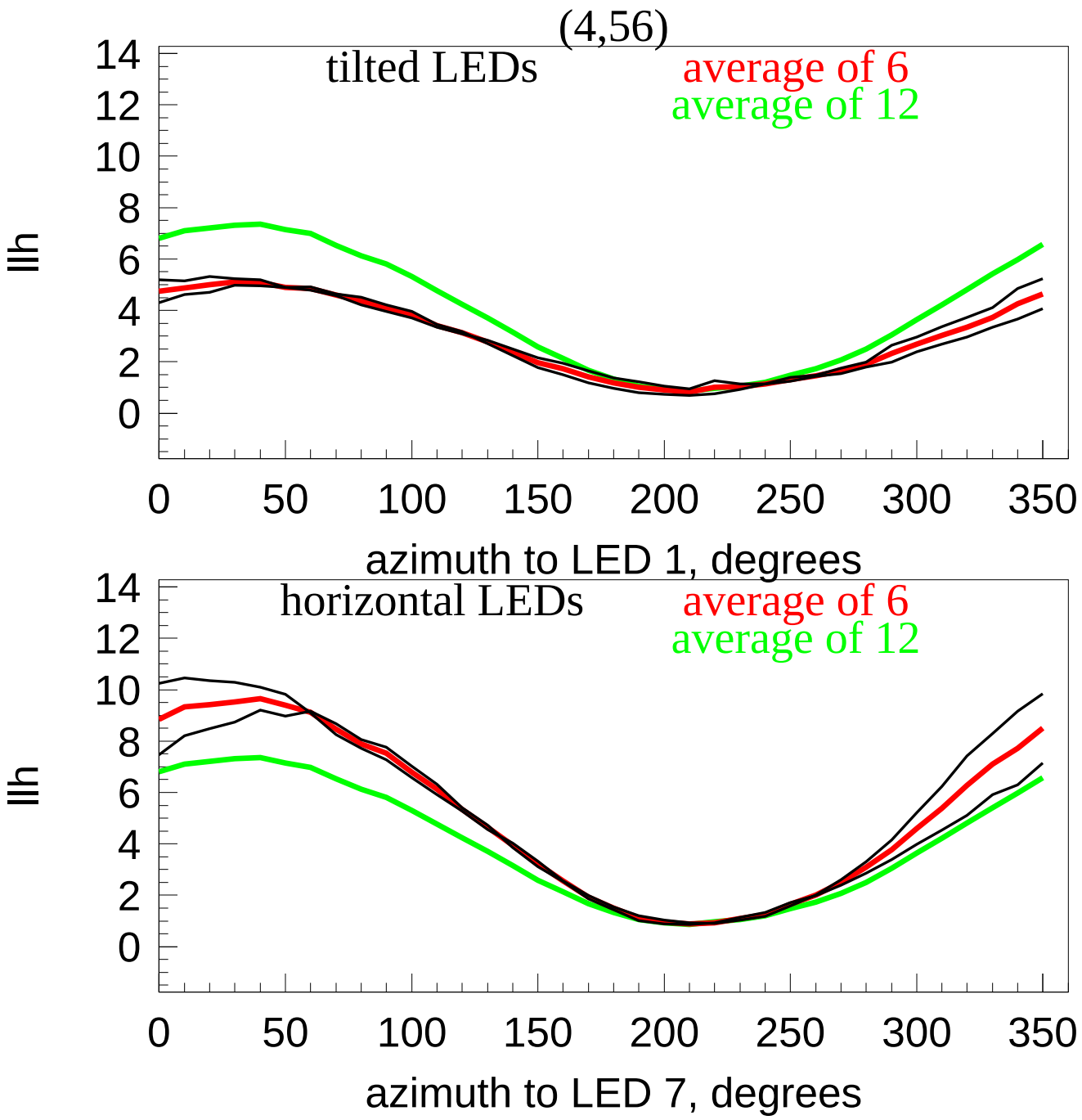

(4,17)
130
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

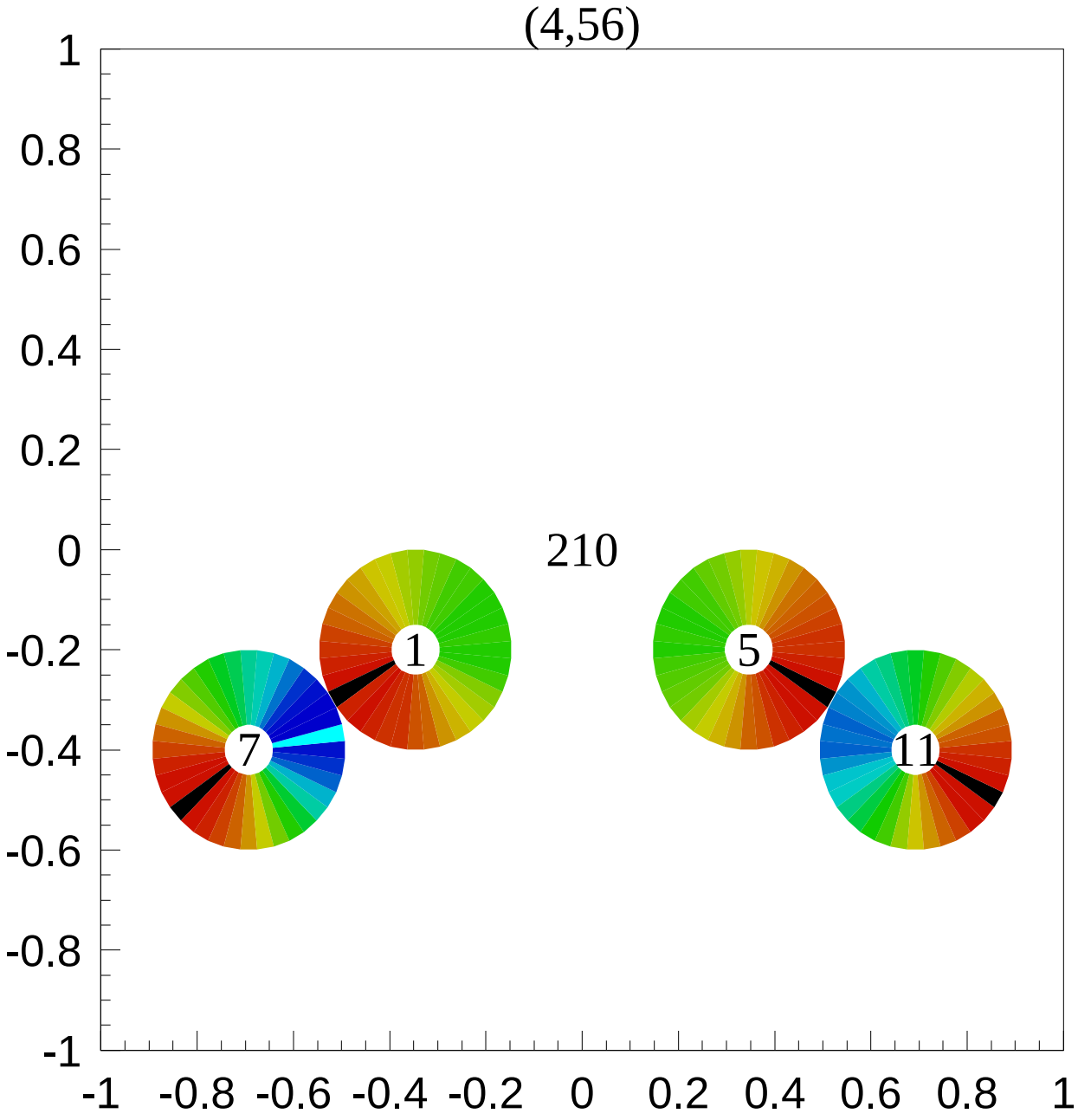

(4,41)
tilted LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

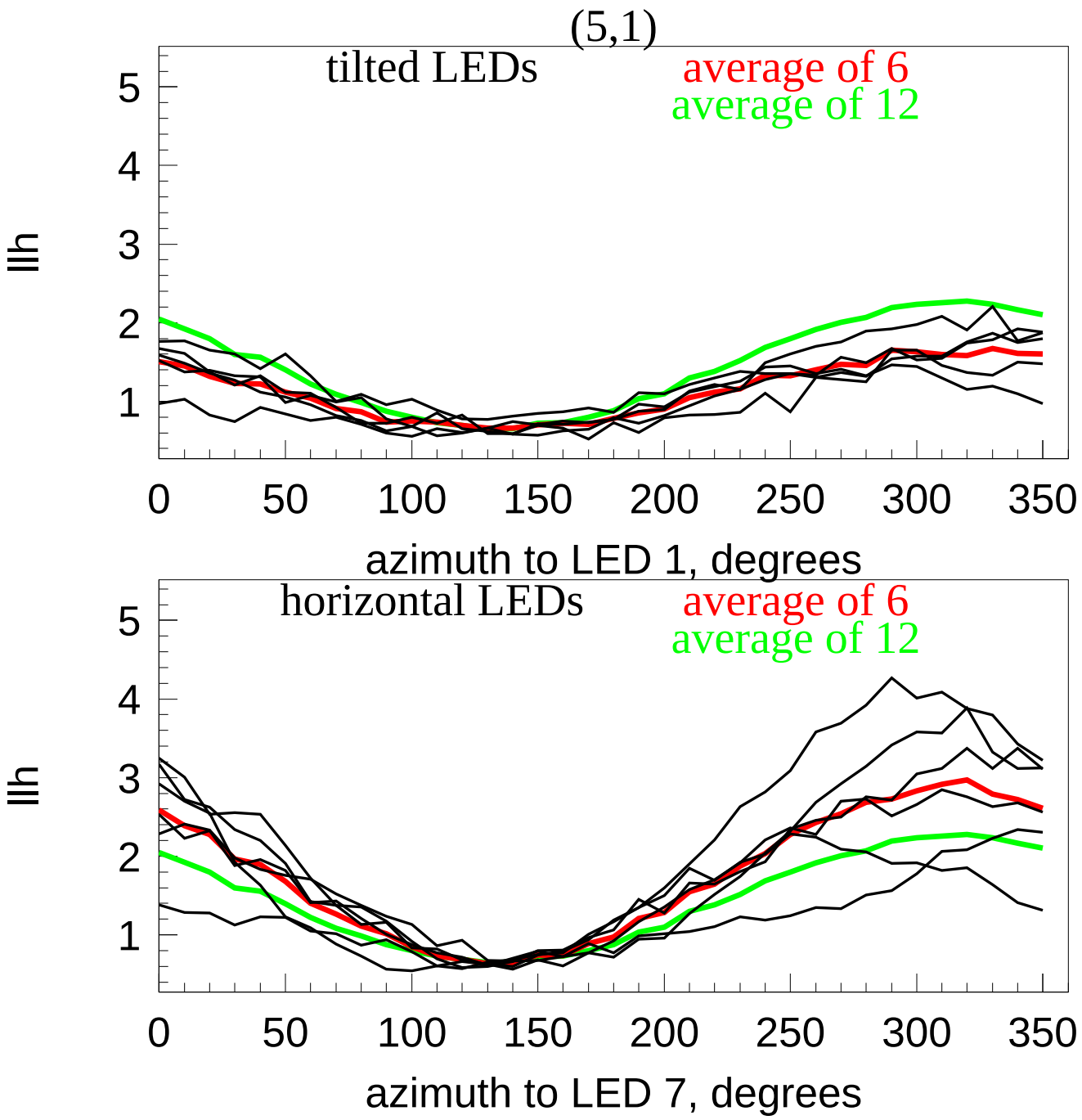

(4,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
170
5
11

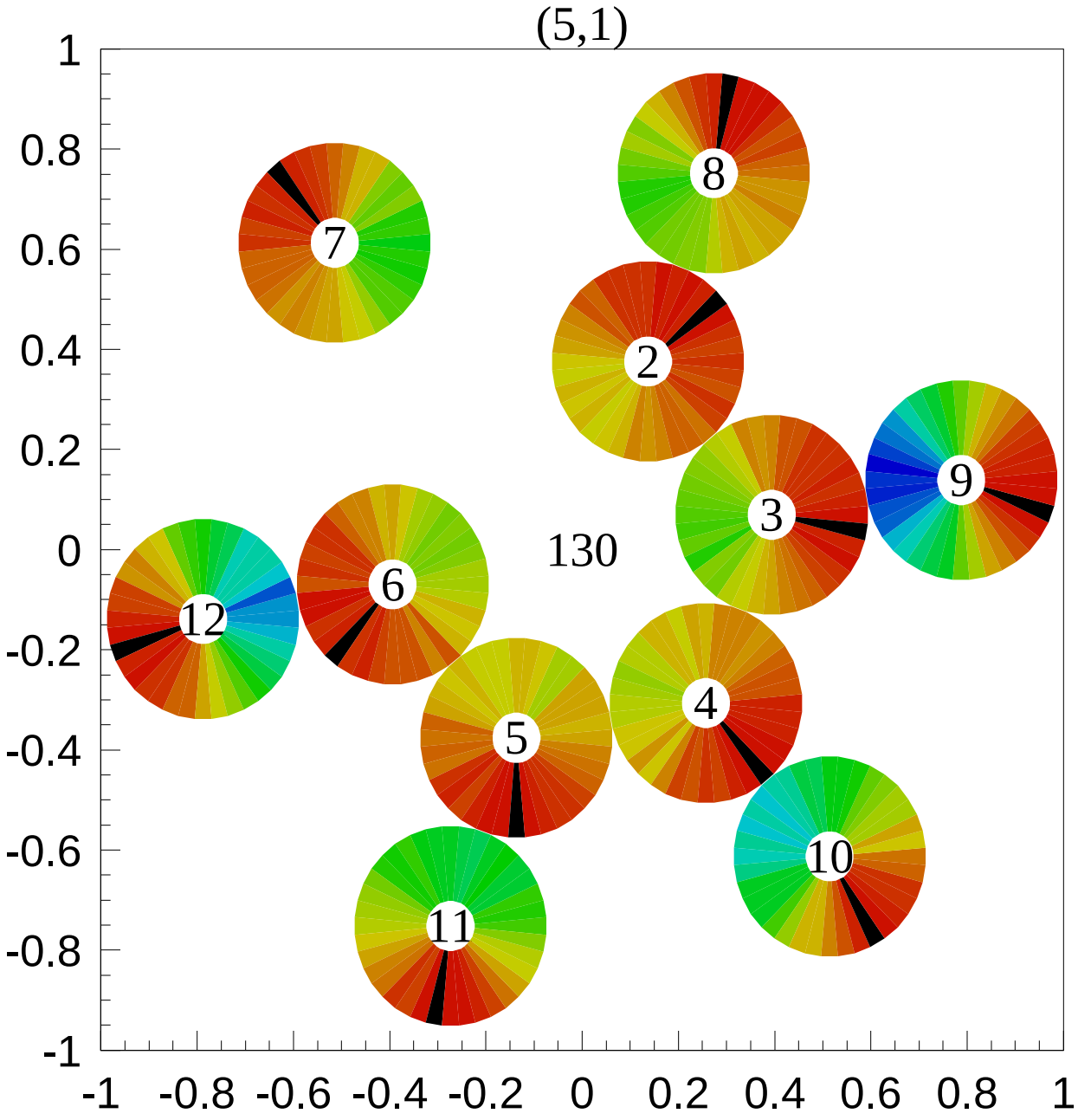

(4,43)
tilted LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

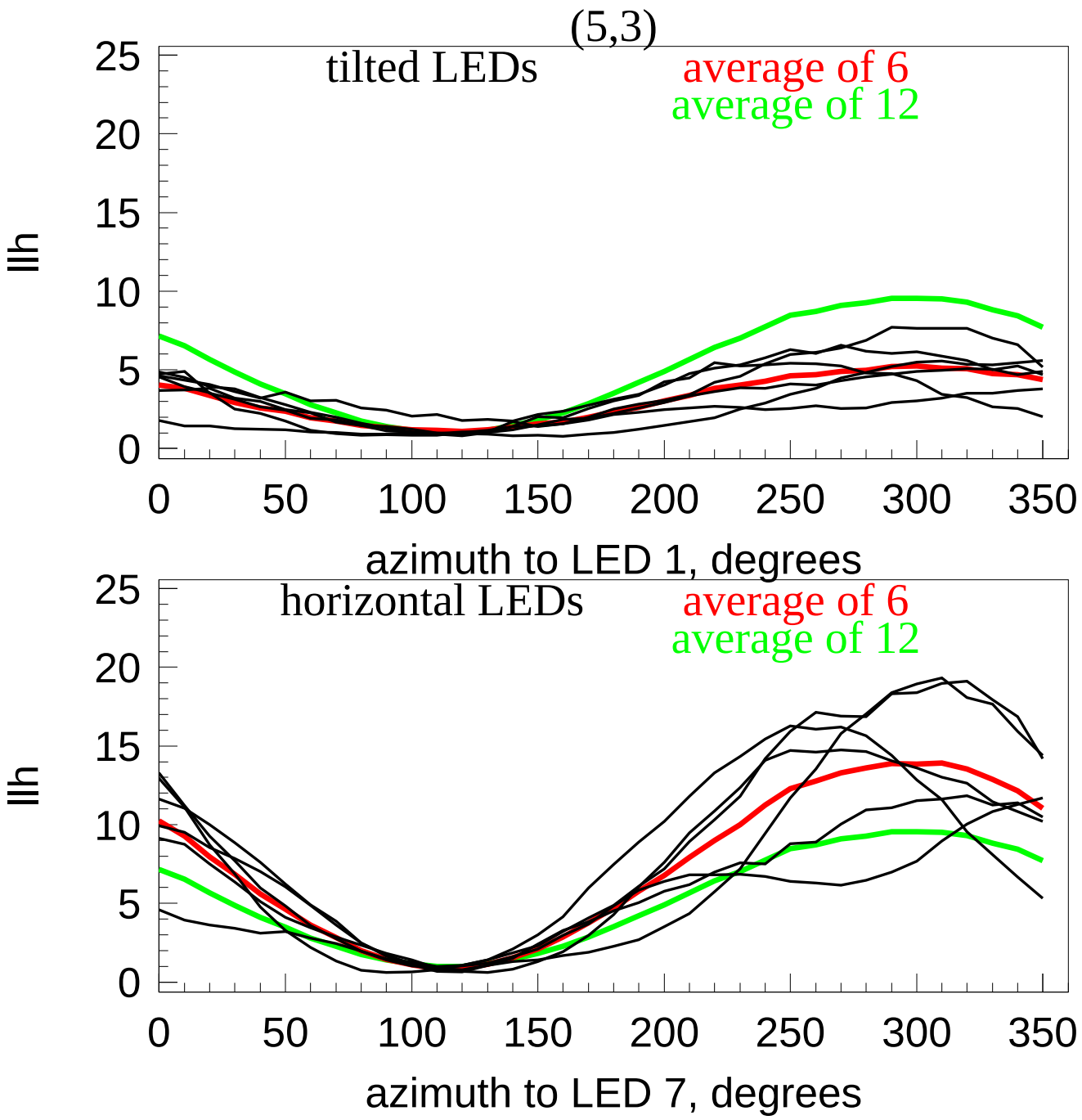

(4,43)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
2
3
4
1
190
12

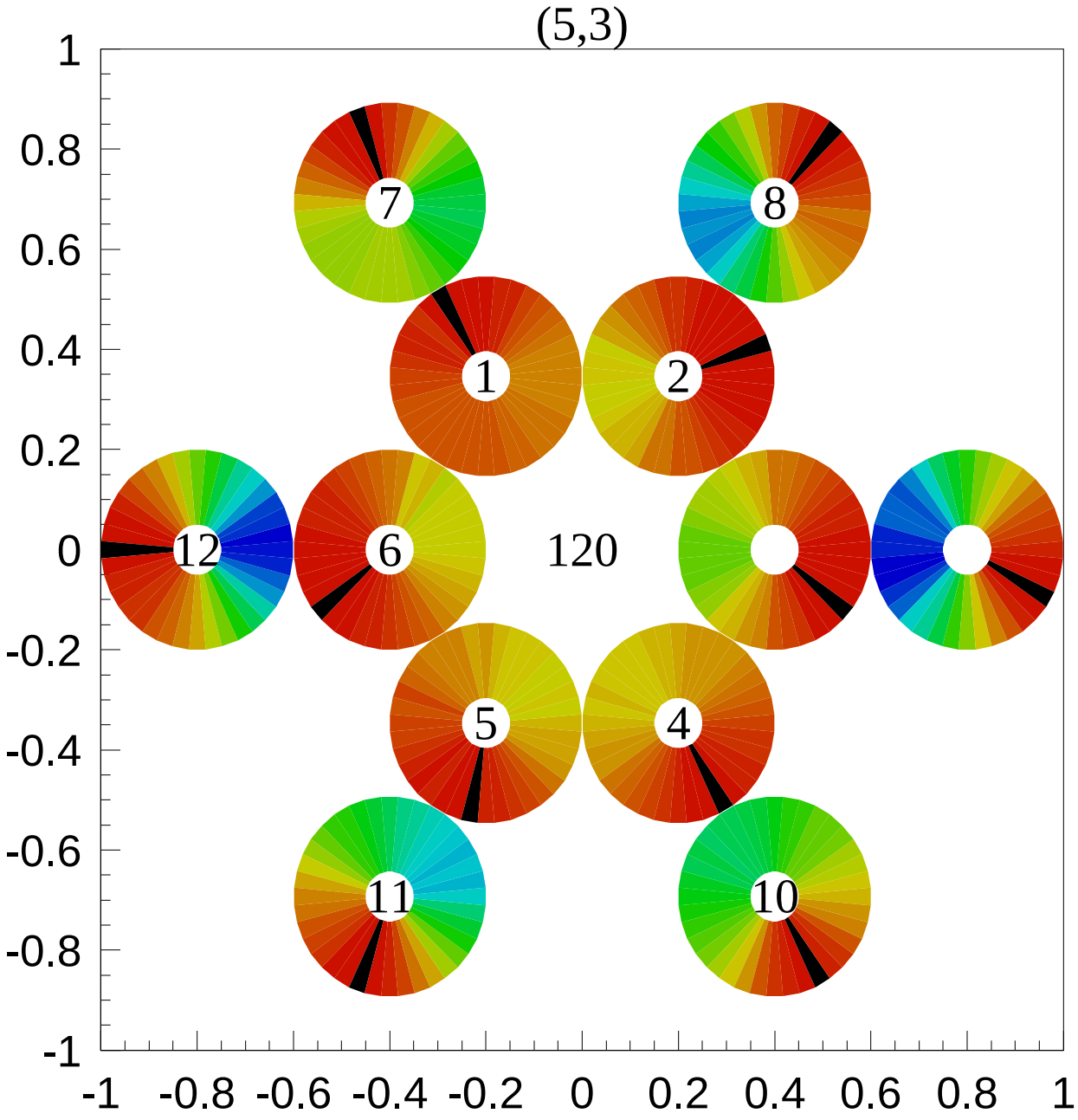

(4,56)
tilted LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

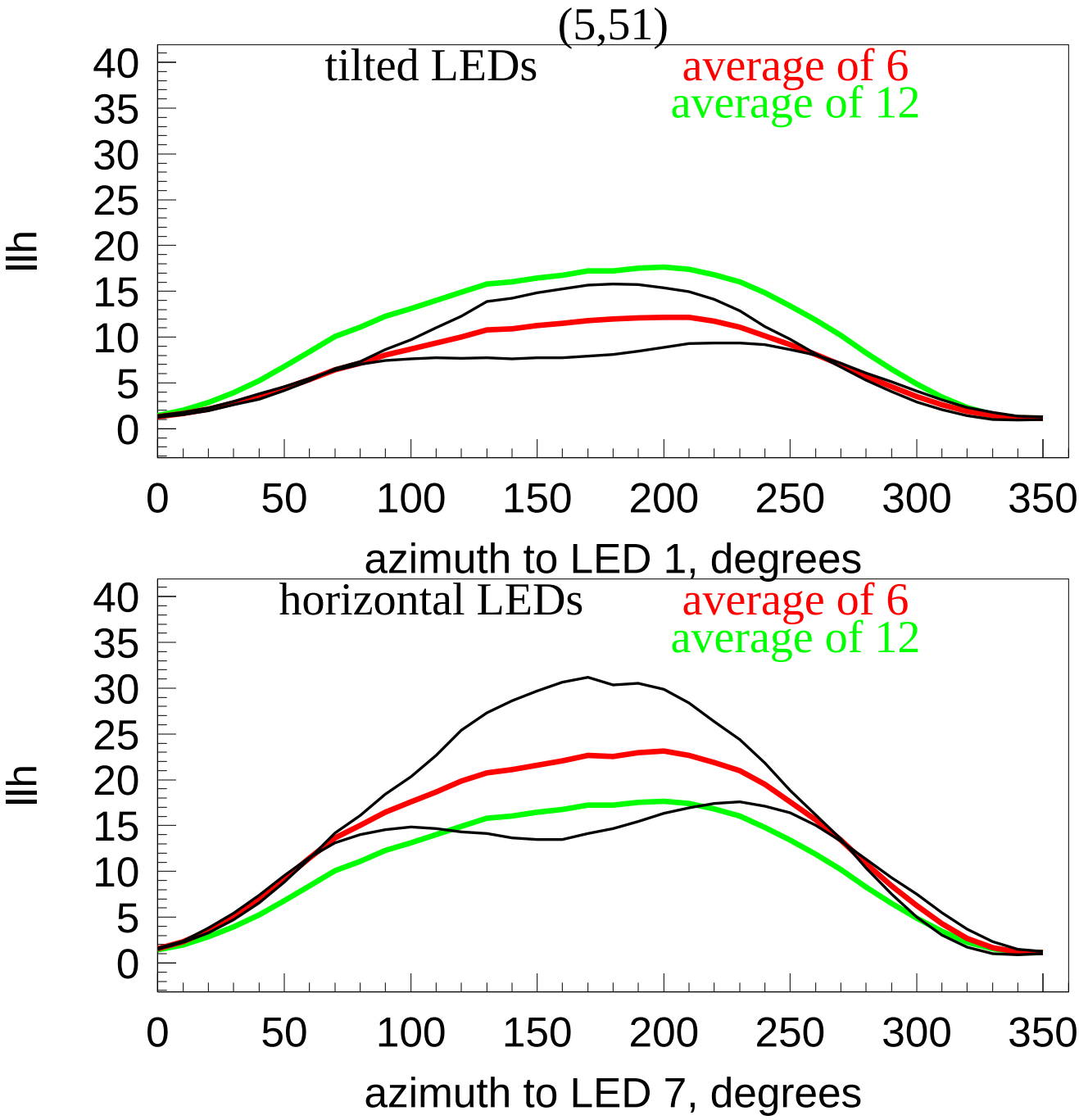

(4,56)
210
1
5
7
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

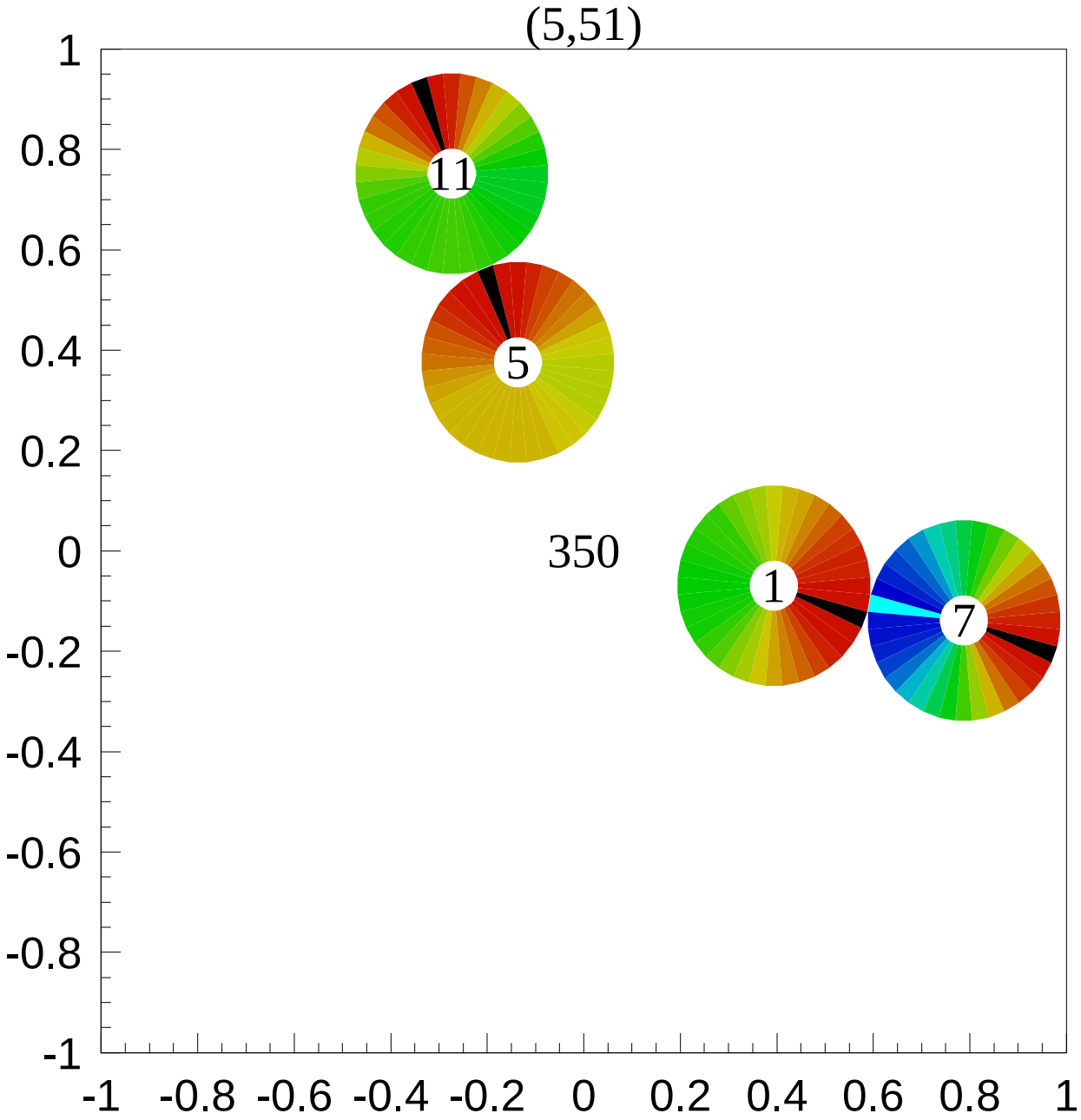

(5,1)
tilted LEDs
average of 6
average of 12
llh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

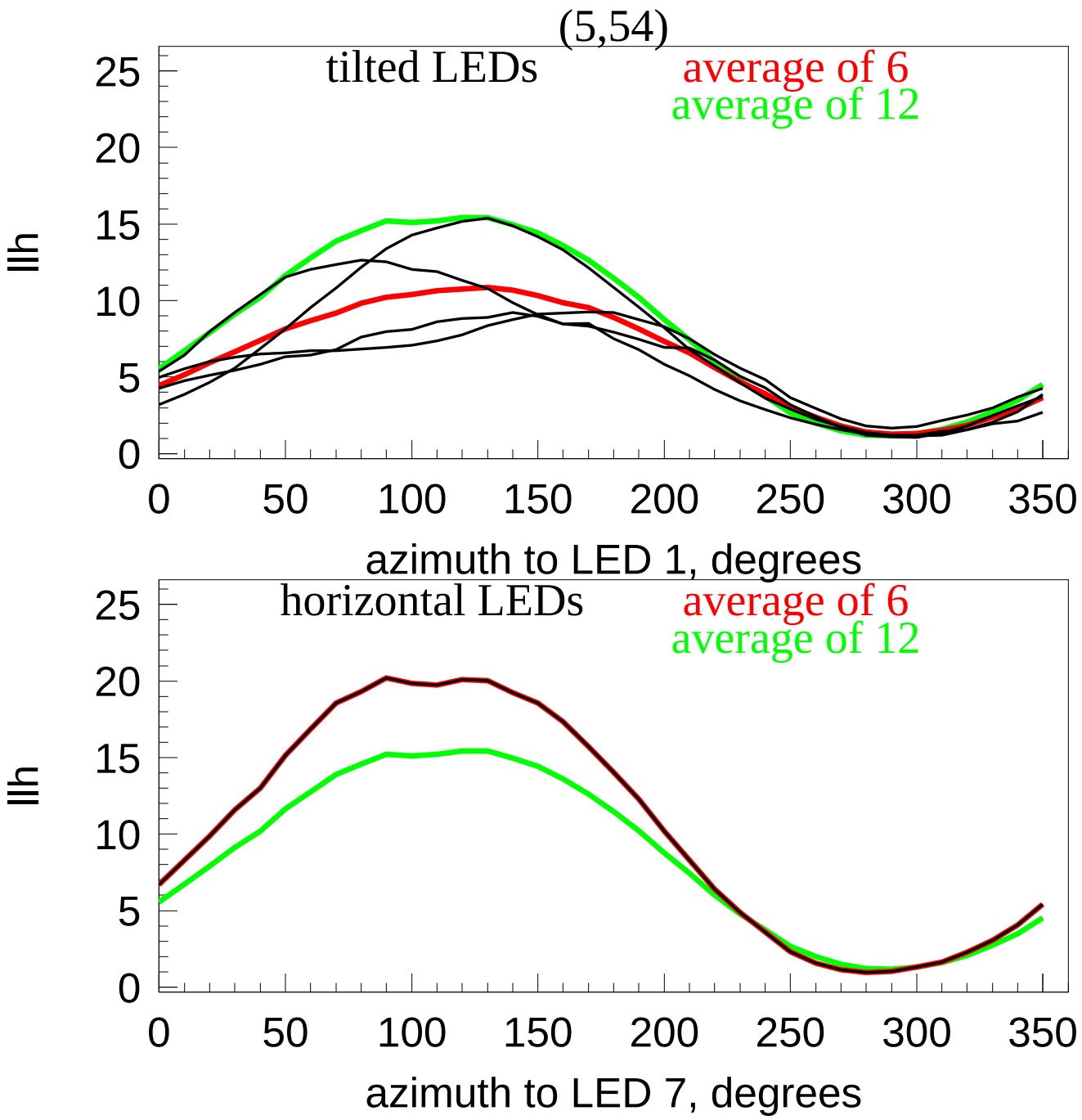

(5,1)
130
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

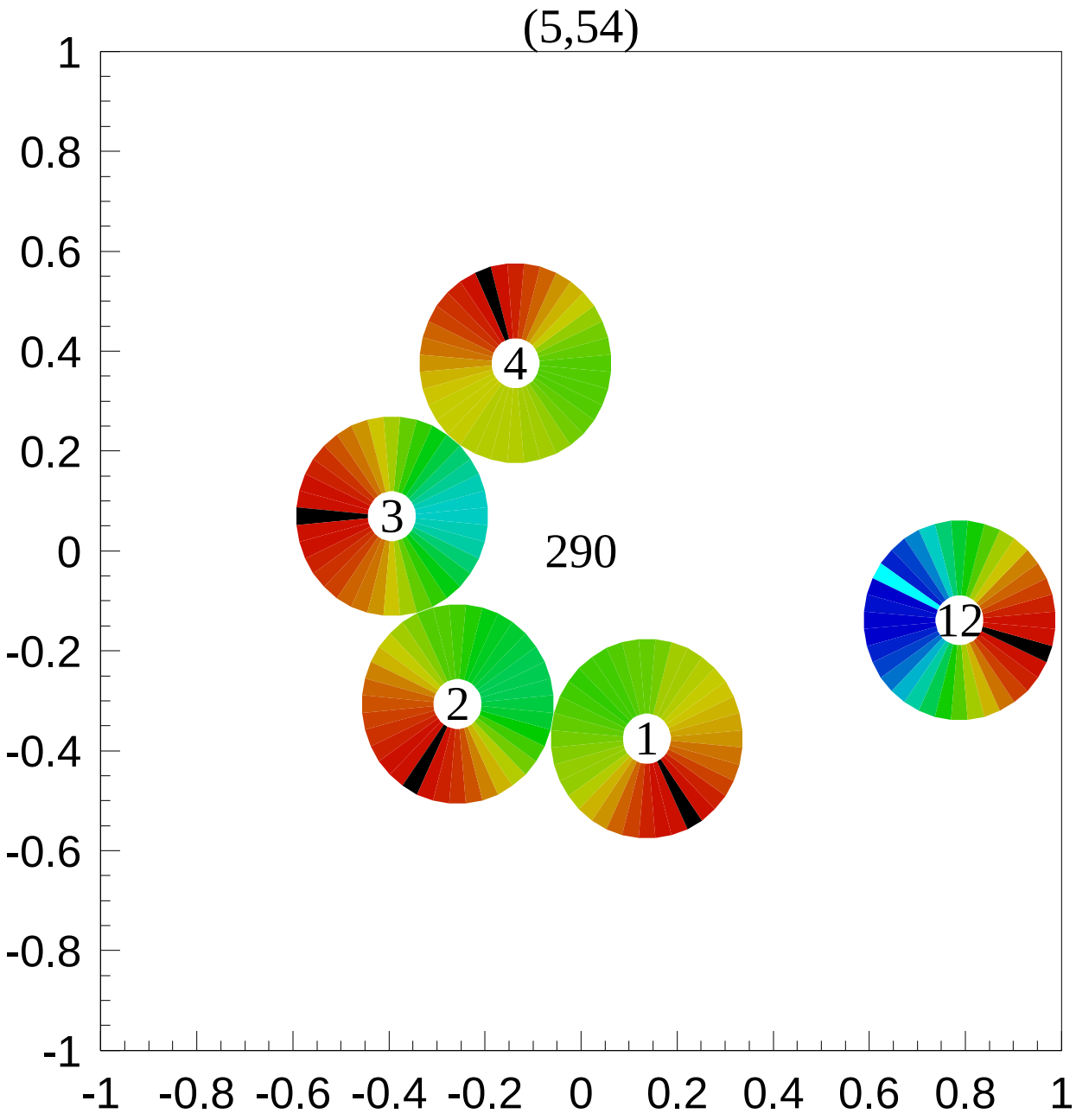

(5,3)
tilted LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

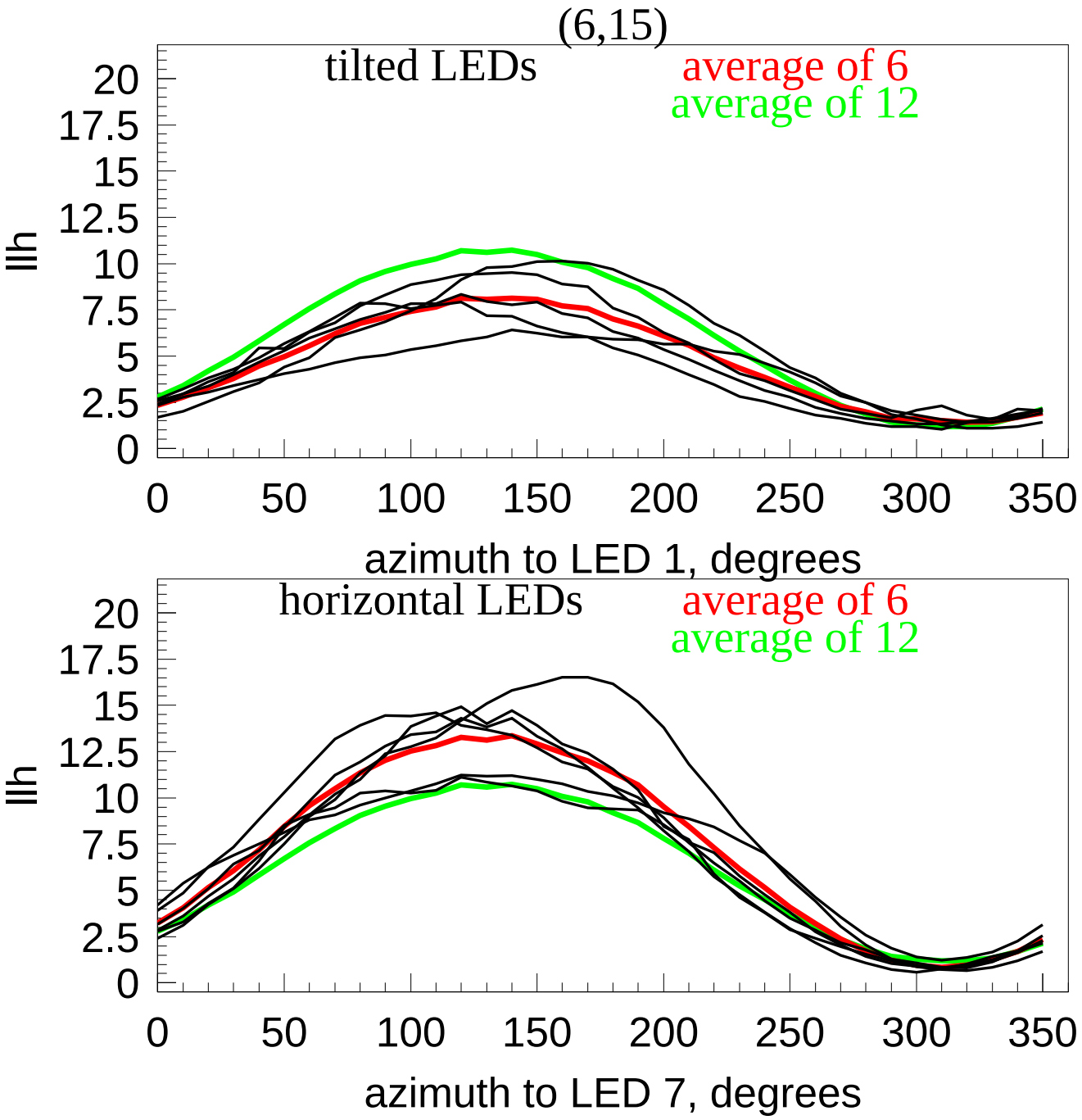

(5,3)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
1
2
12
6
120
5
4
11
10

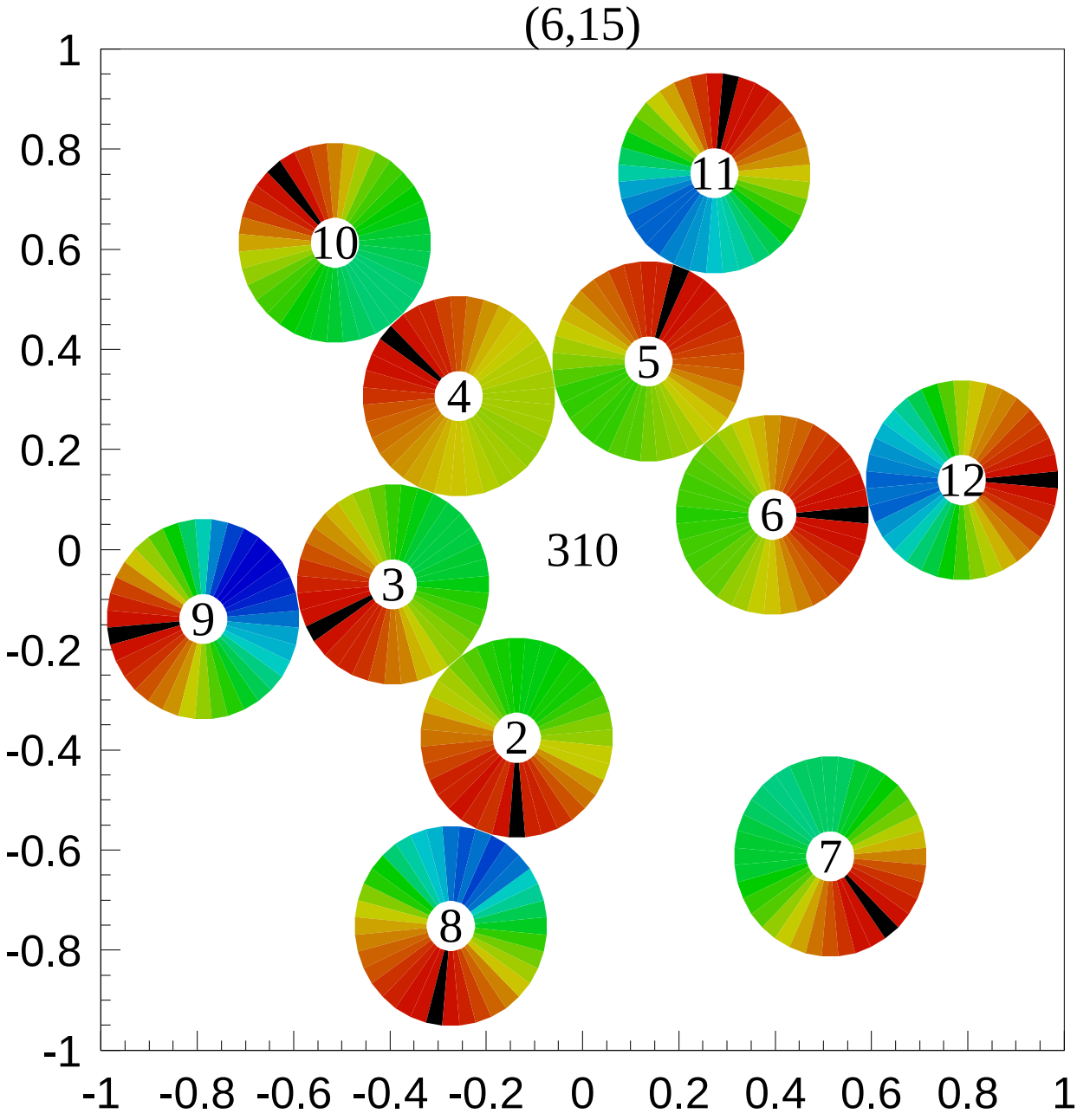

(5,51)
tilted LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

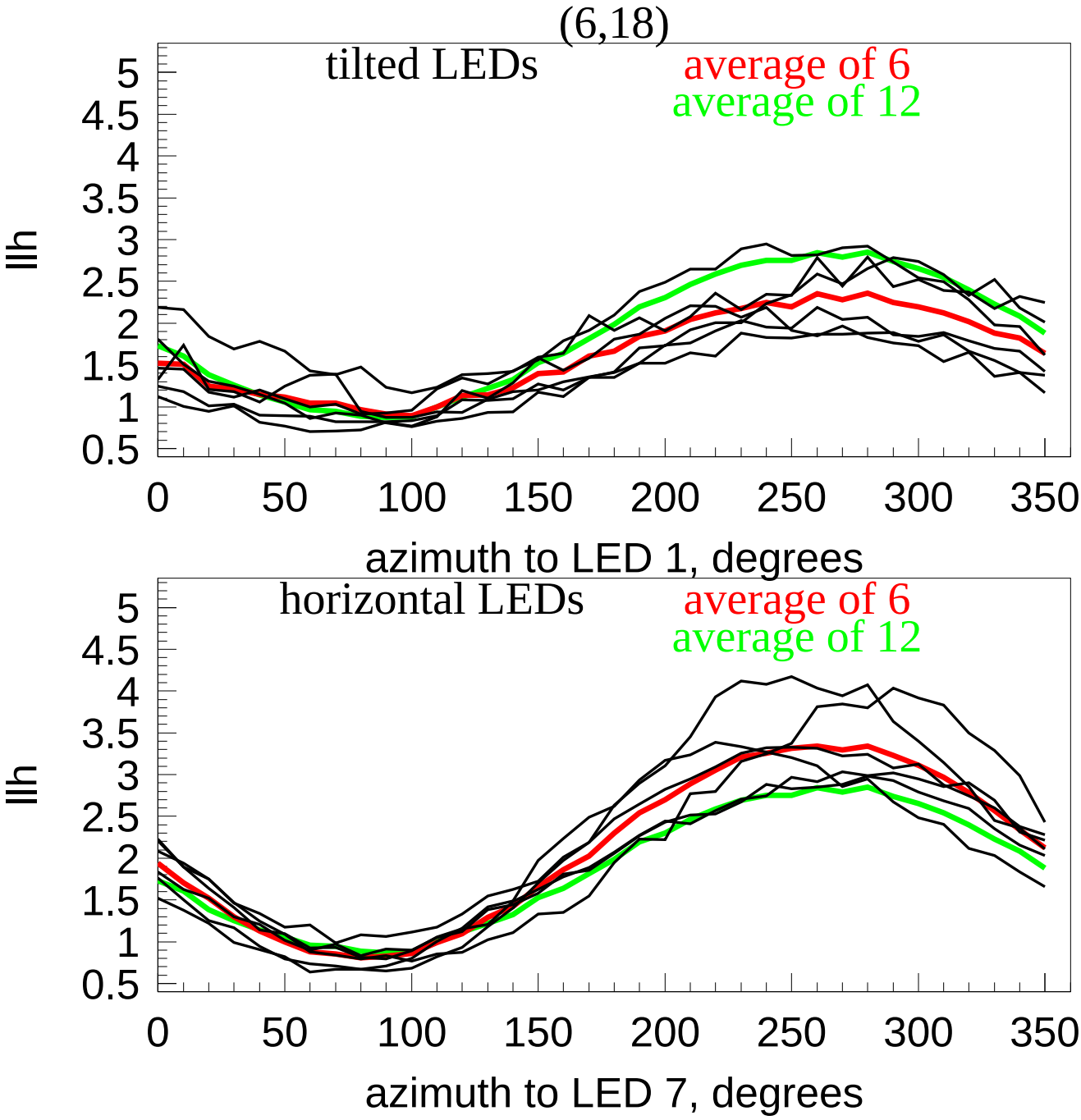

(5,51)
11
5
350
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

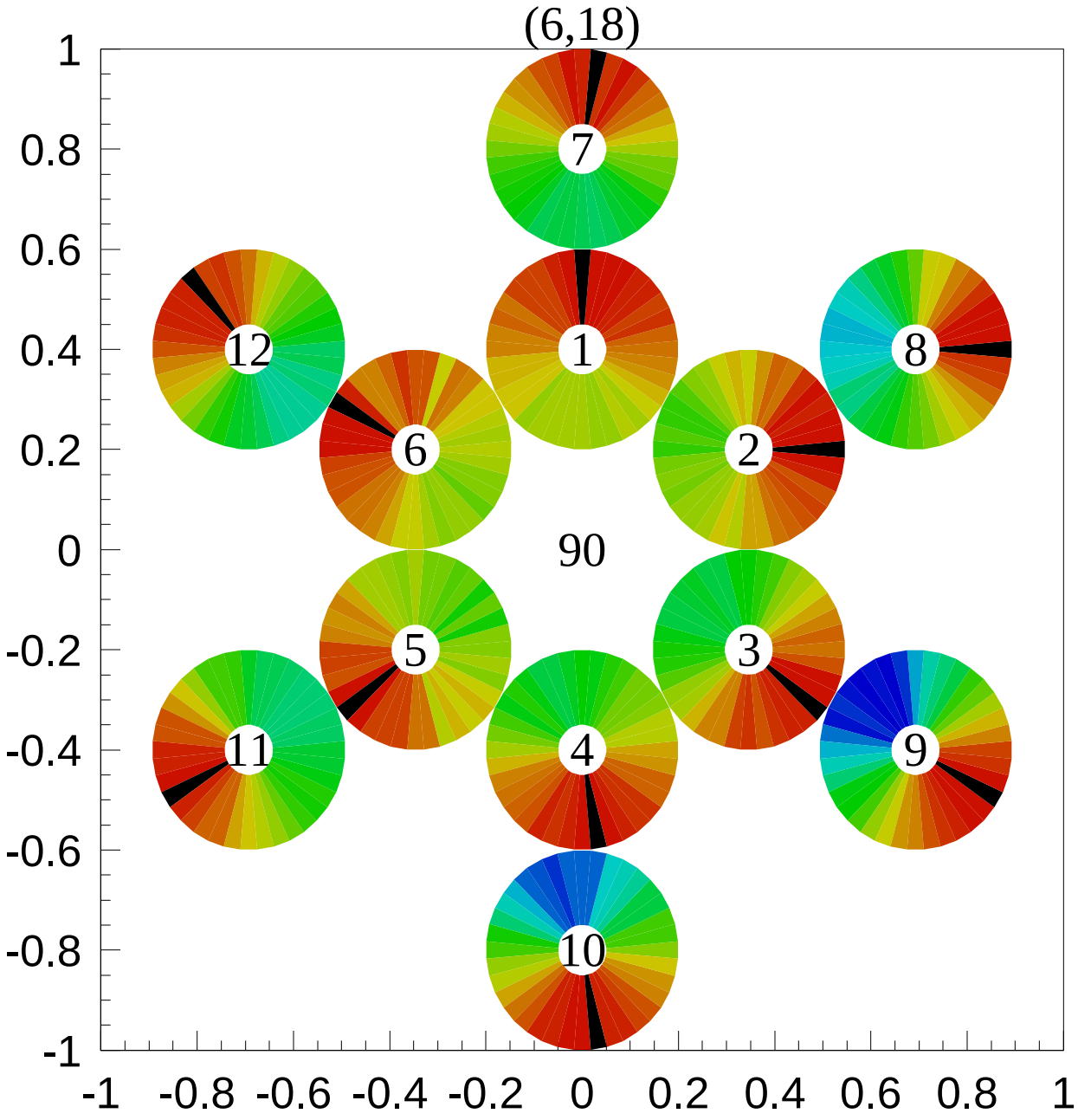

(5,54)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

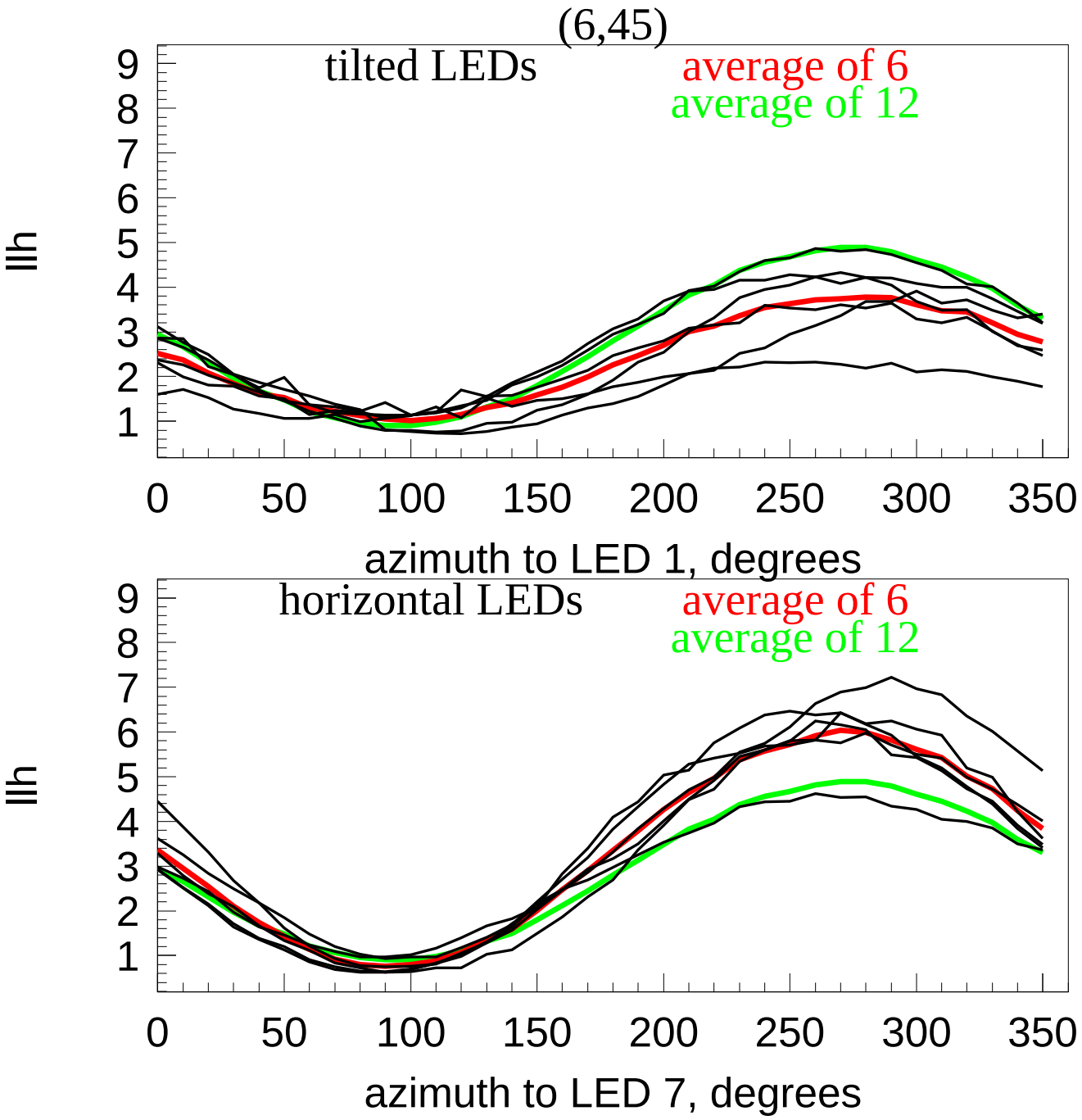

(5,54)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
4
3
290
12
2
1

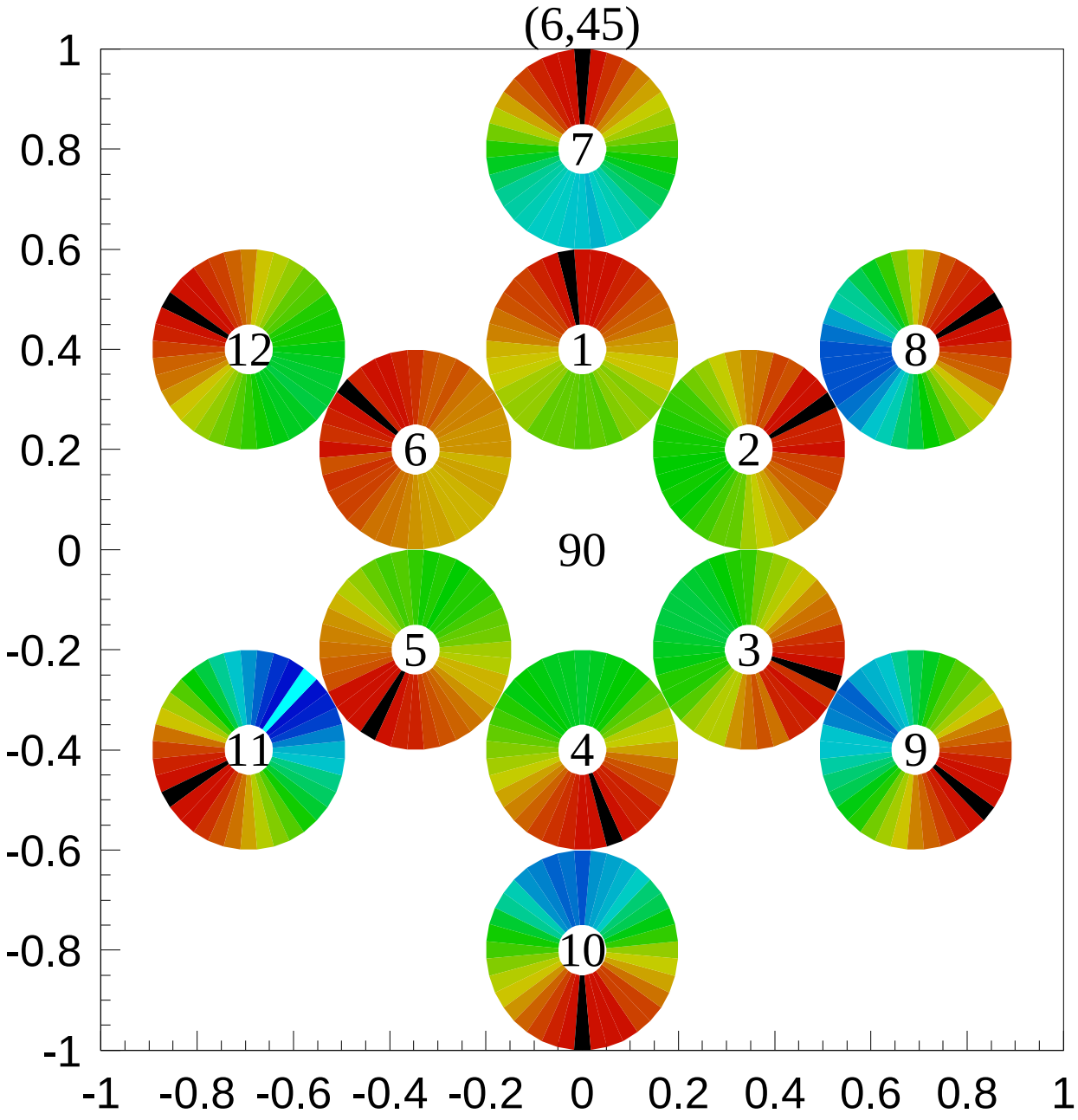

(6,15)
tilted LEDs
average of 6
average of 12
llh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

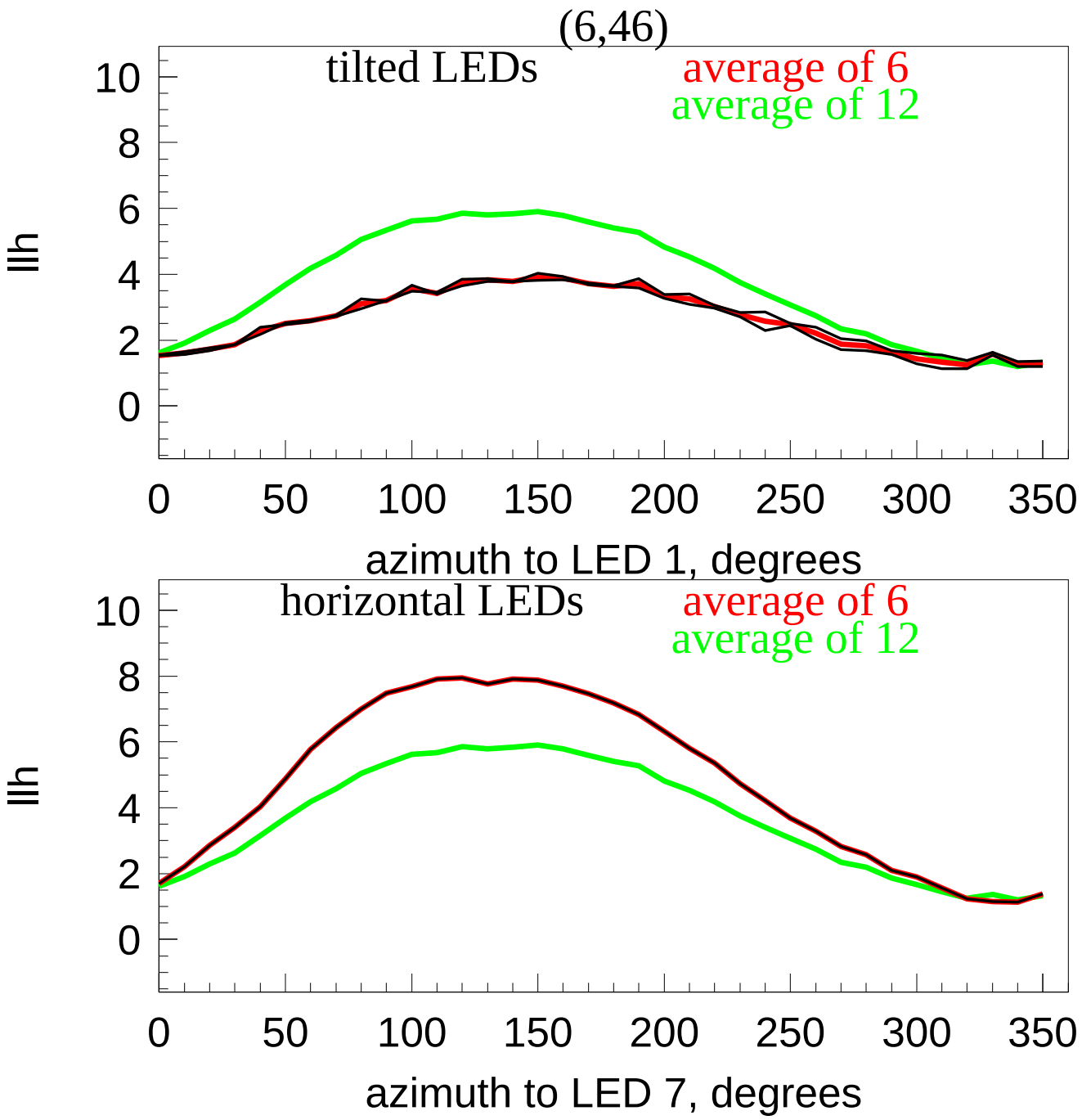

(6,15)
310
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

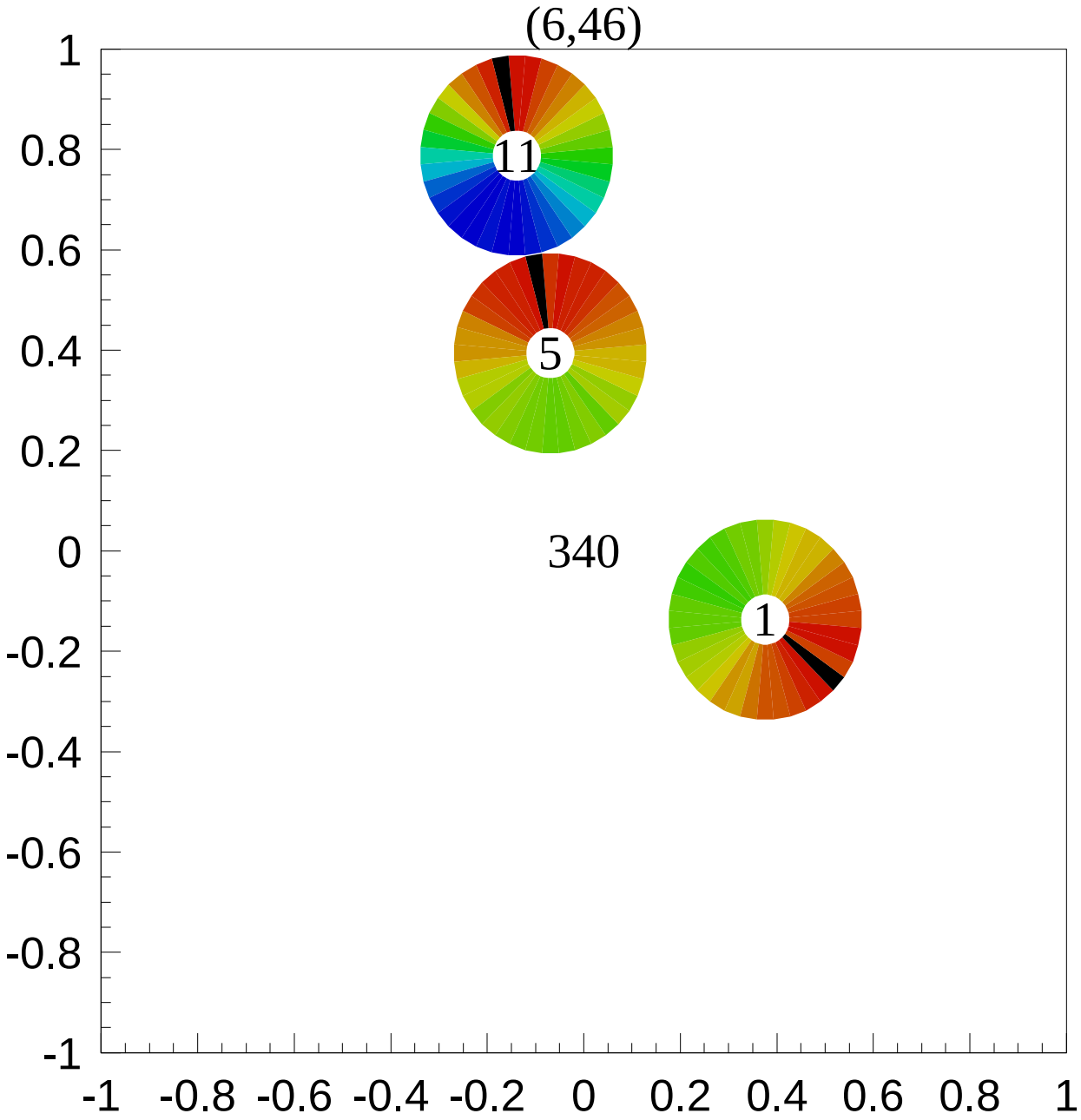

(6,18)
tilted LEDs
average of 6
average of 12
llh
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

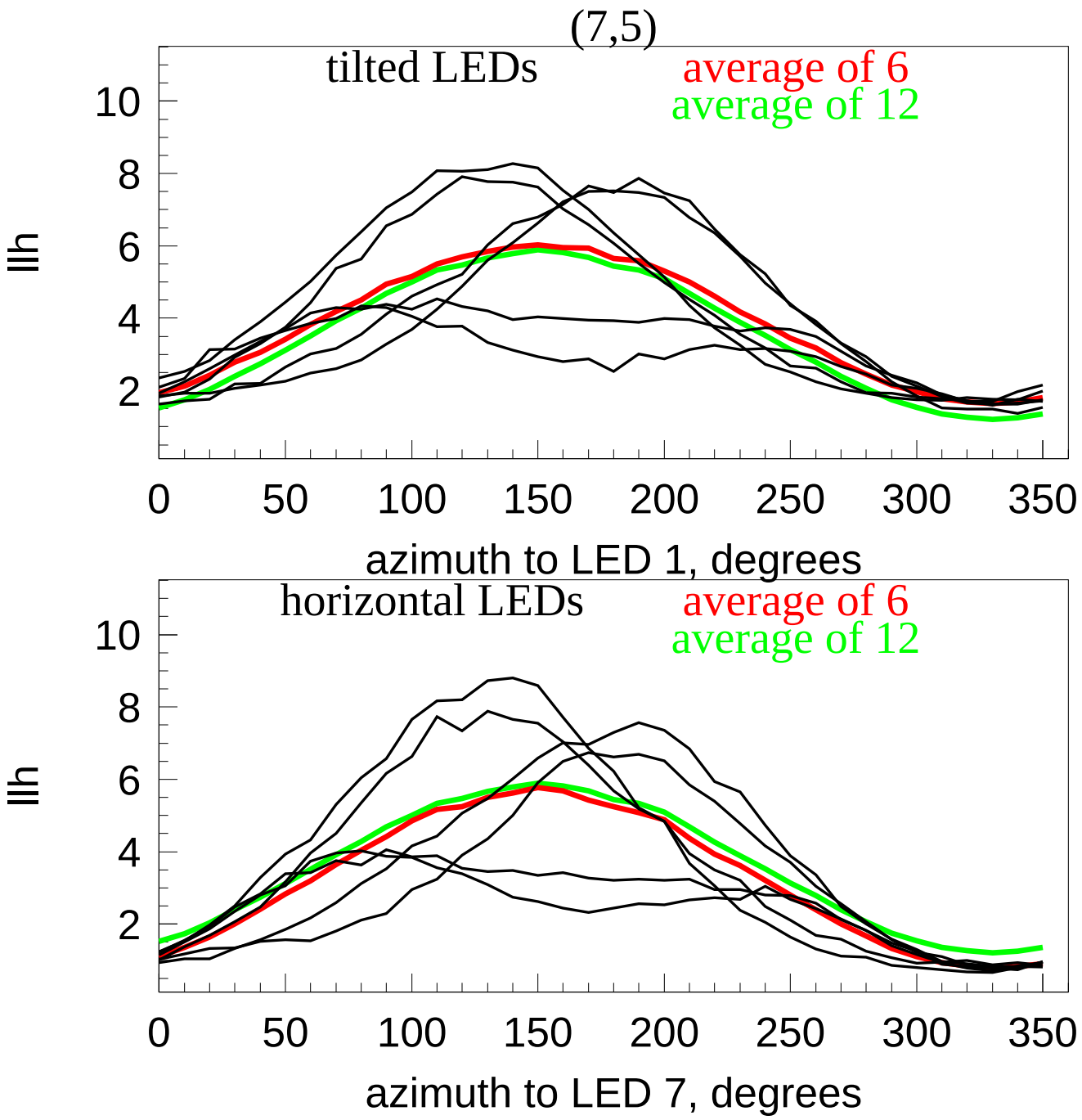

(6,18)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
12
1
8
6
2
90
5
3
11
4
9
10

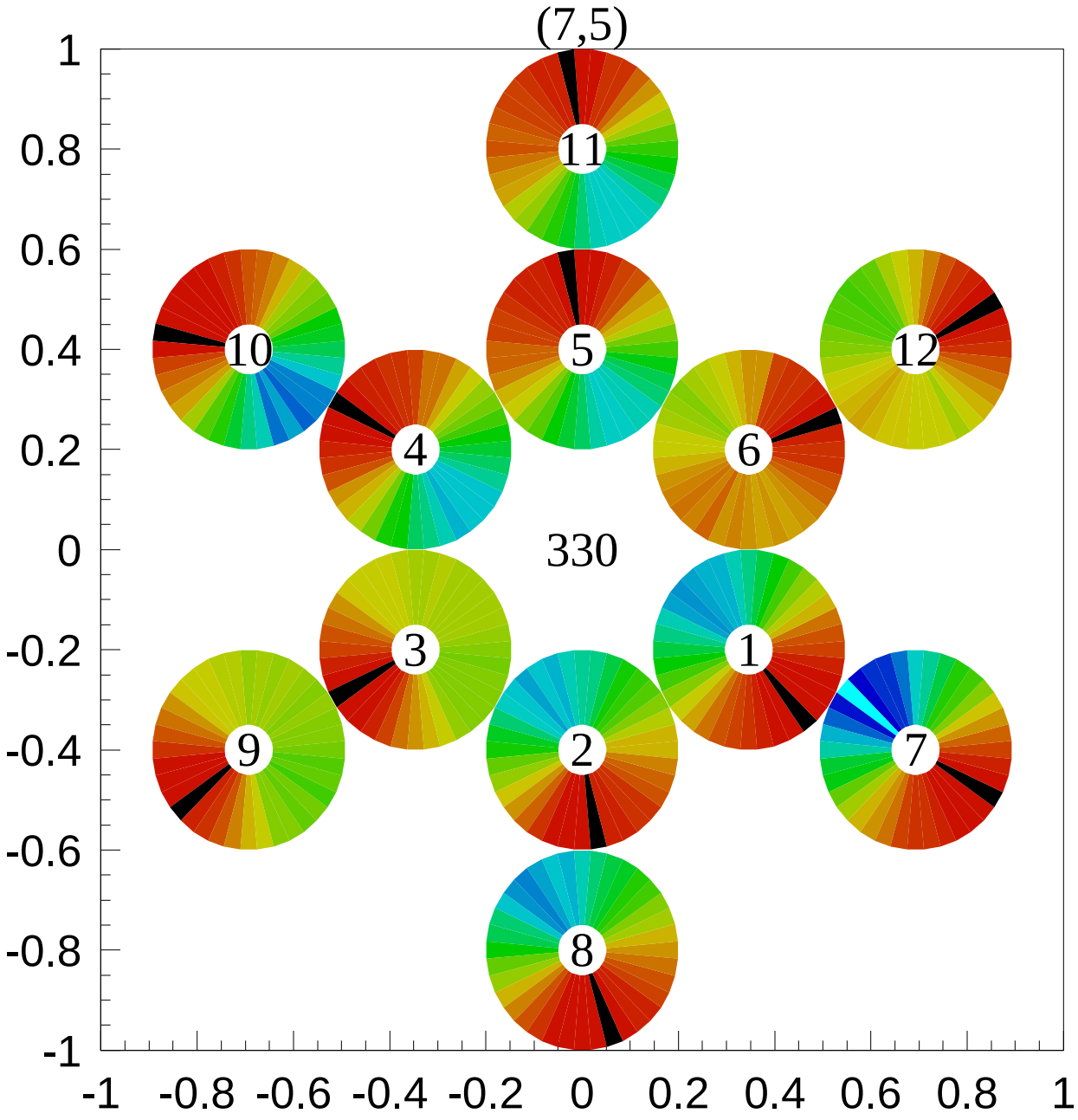

(6,45)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

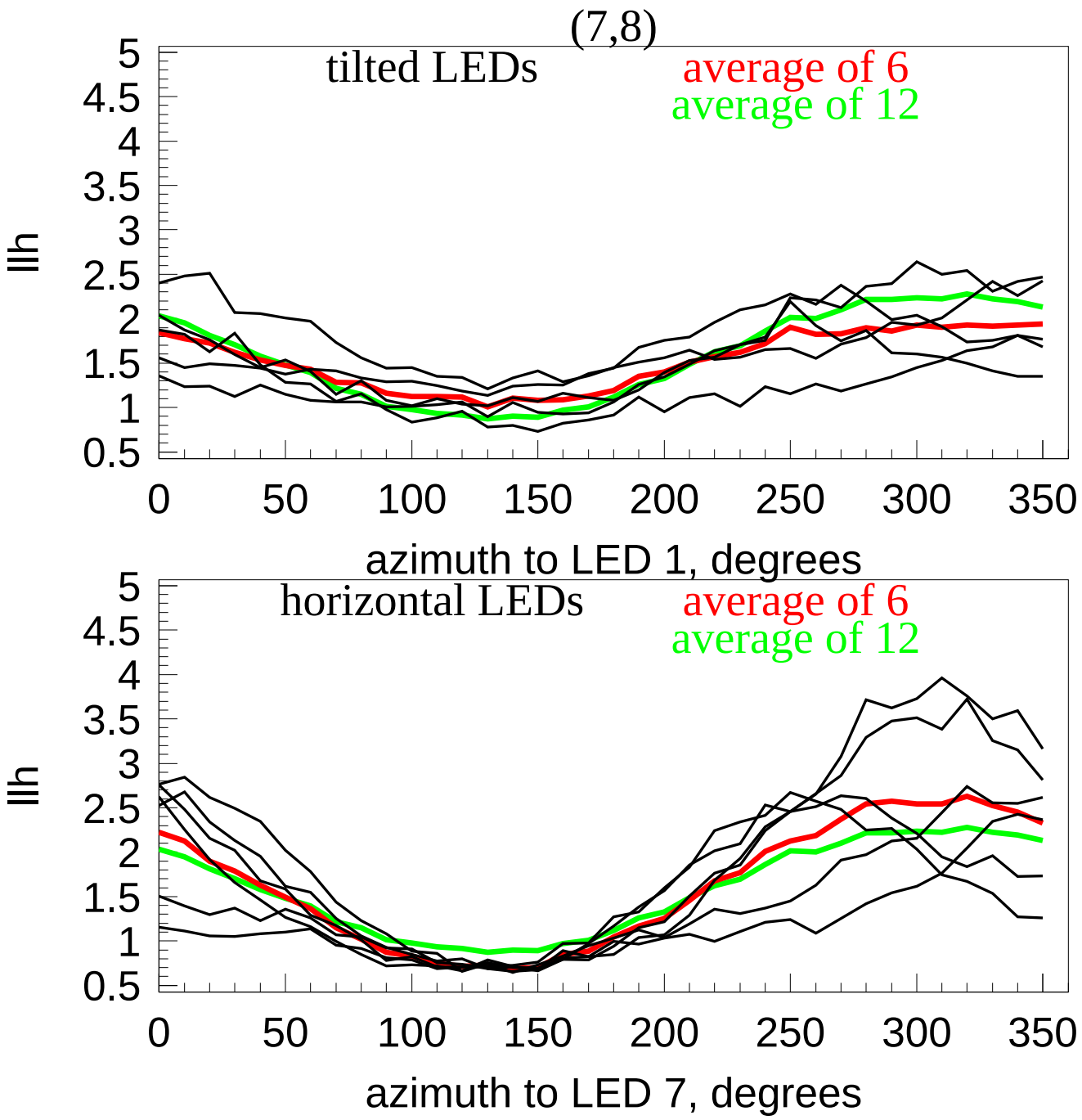

(6,45)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
12
1
8
6
2
90
5
3
11
4
9
10

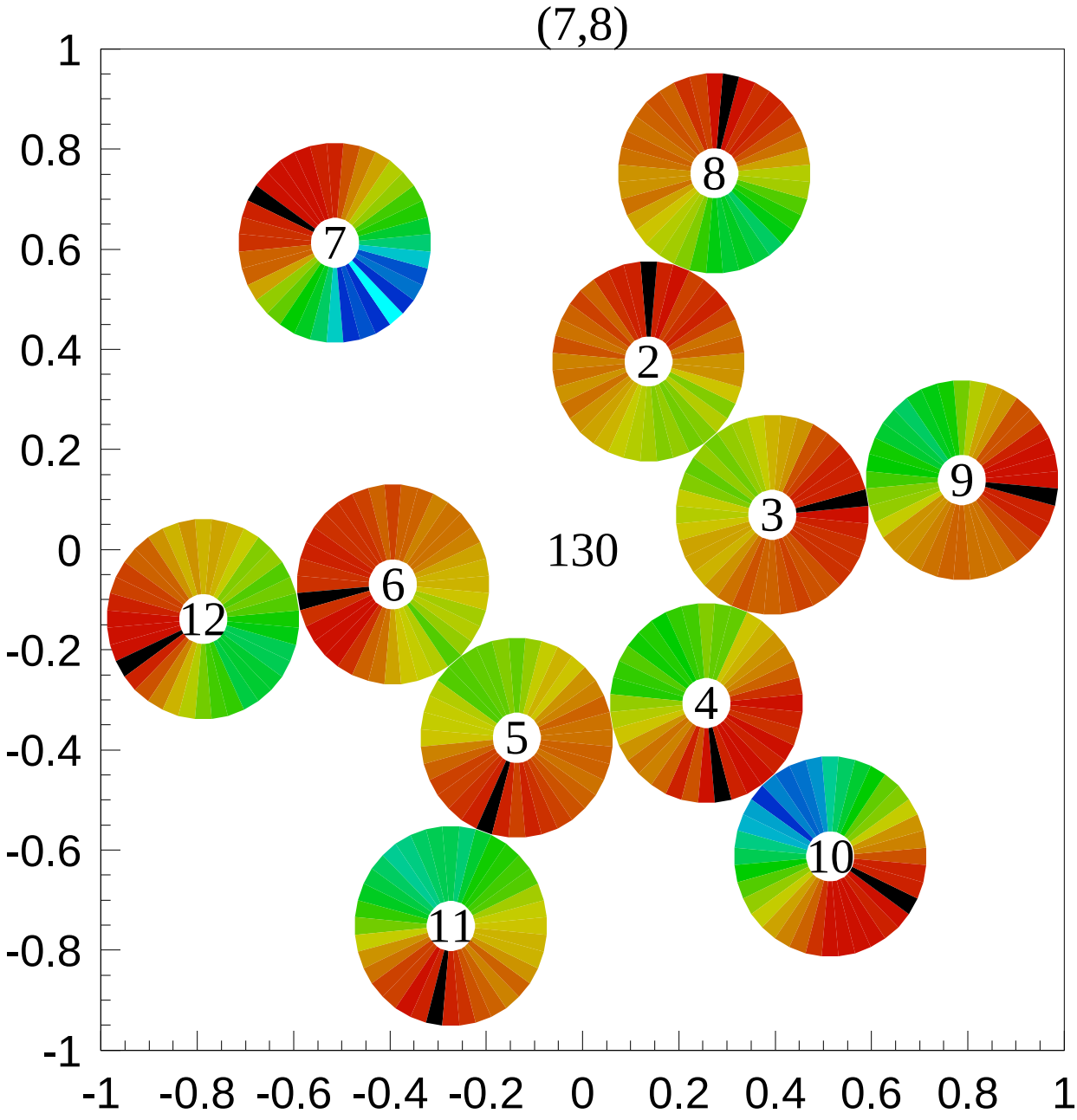

(6,46)
tilted LEDs
average of 6
average of 12
llh
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

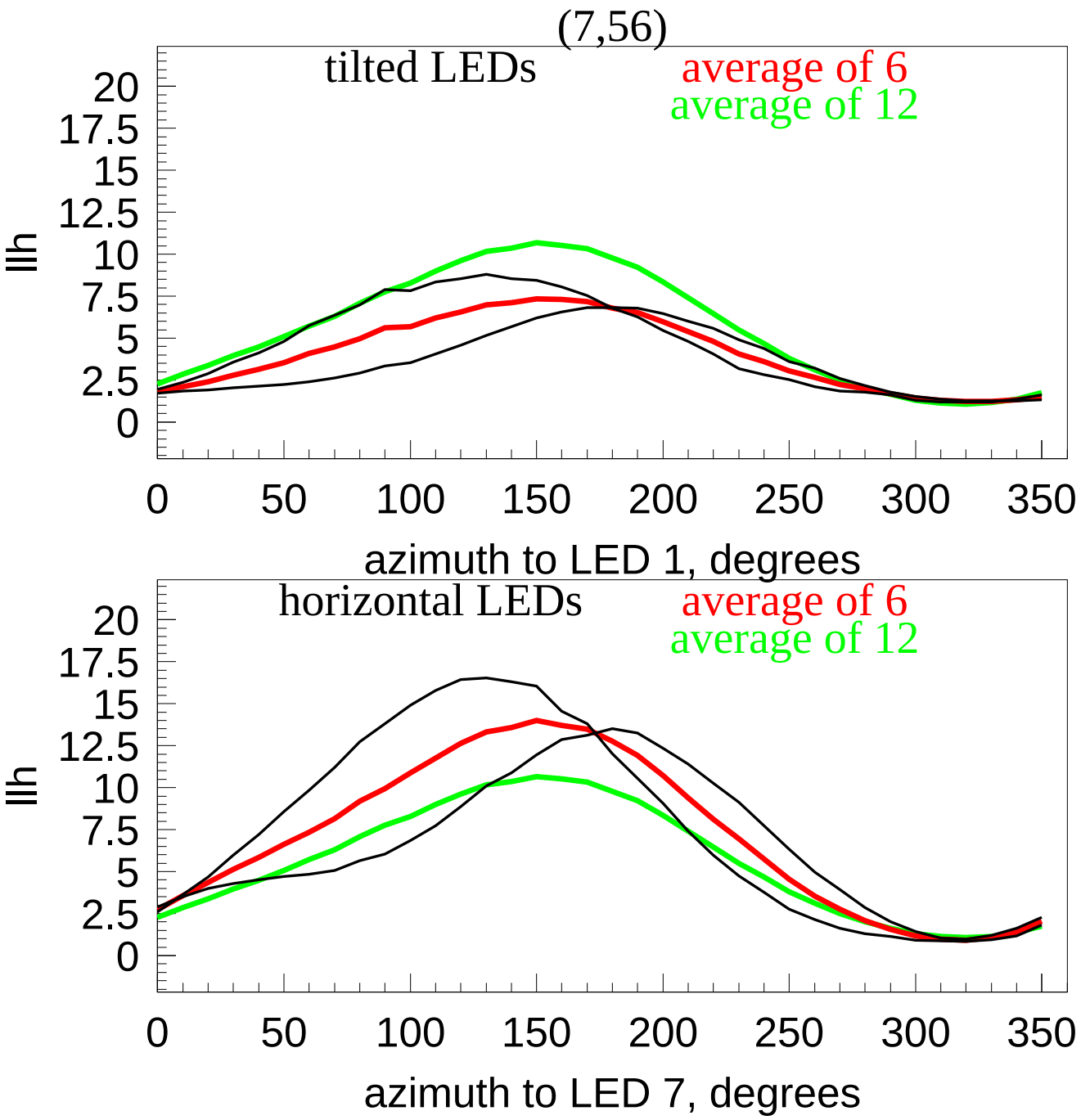

(6,46)
11
5
340
1
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

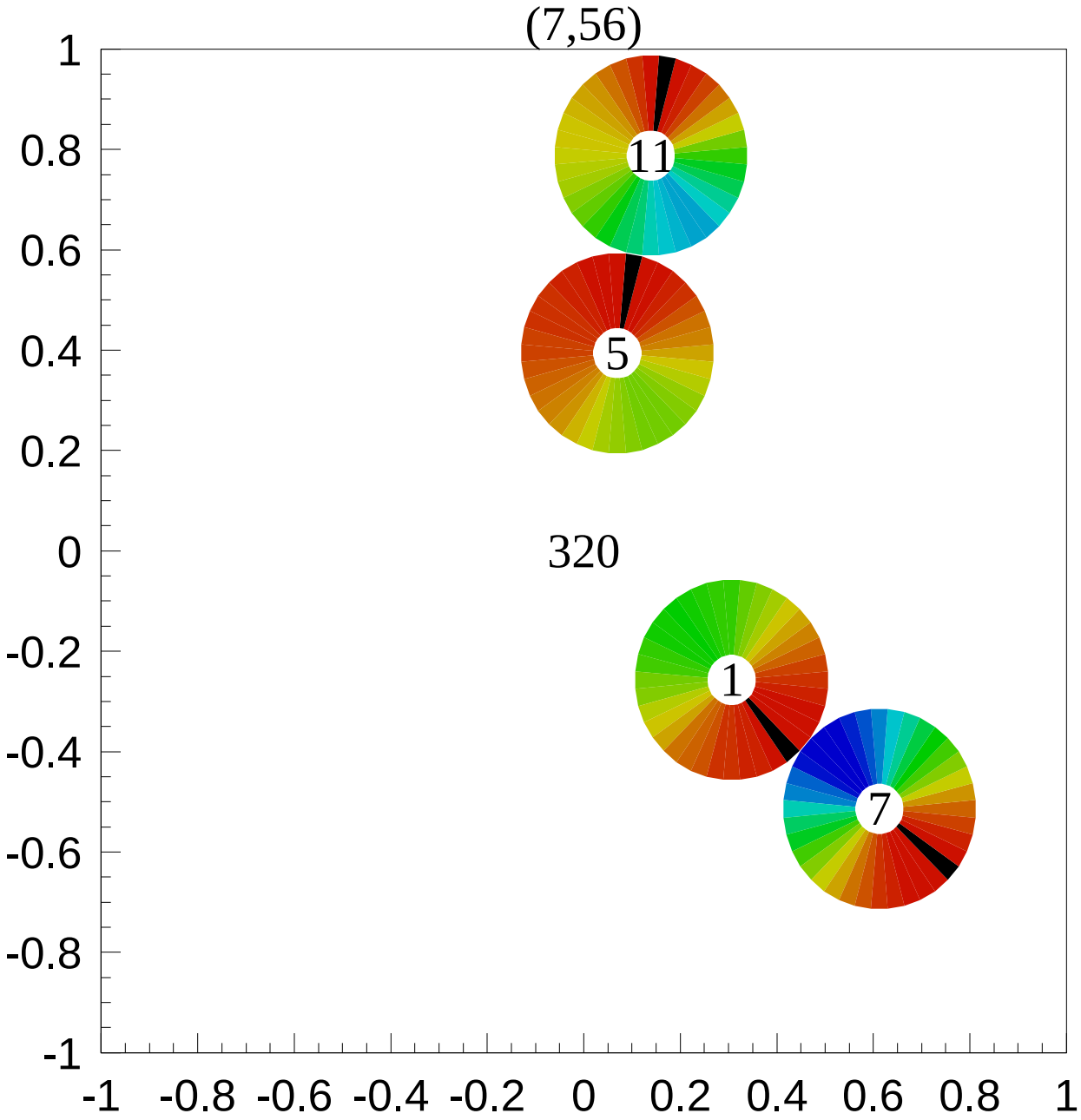

(7,5)
tilted LEDs
average of 6
average of 12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

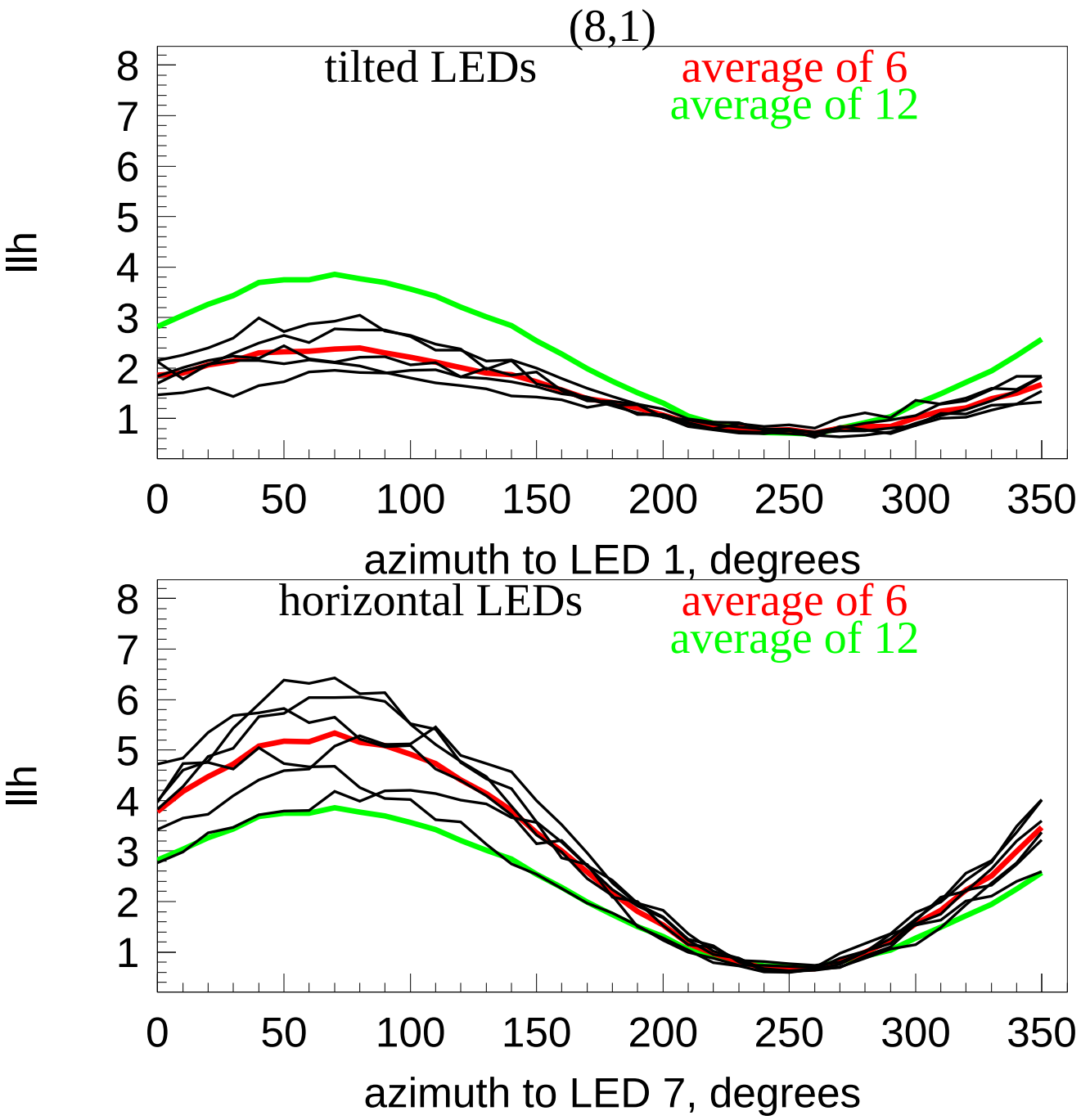

(7,5)
11
10
5
12
4
6
330
3
1
9
2
7
8
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

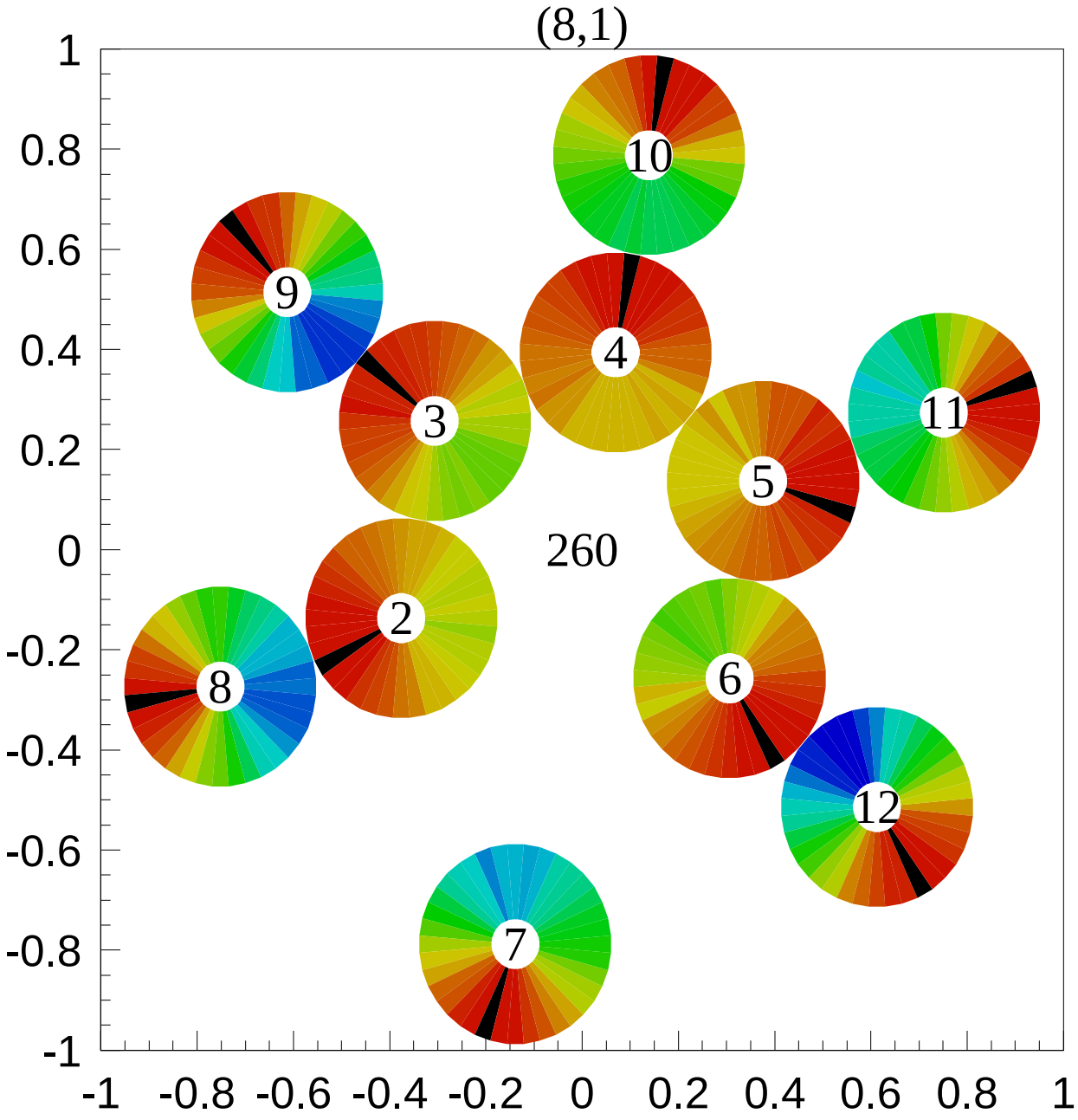

(7,8)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

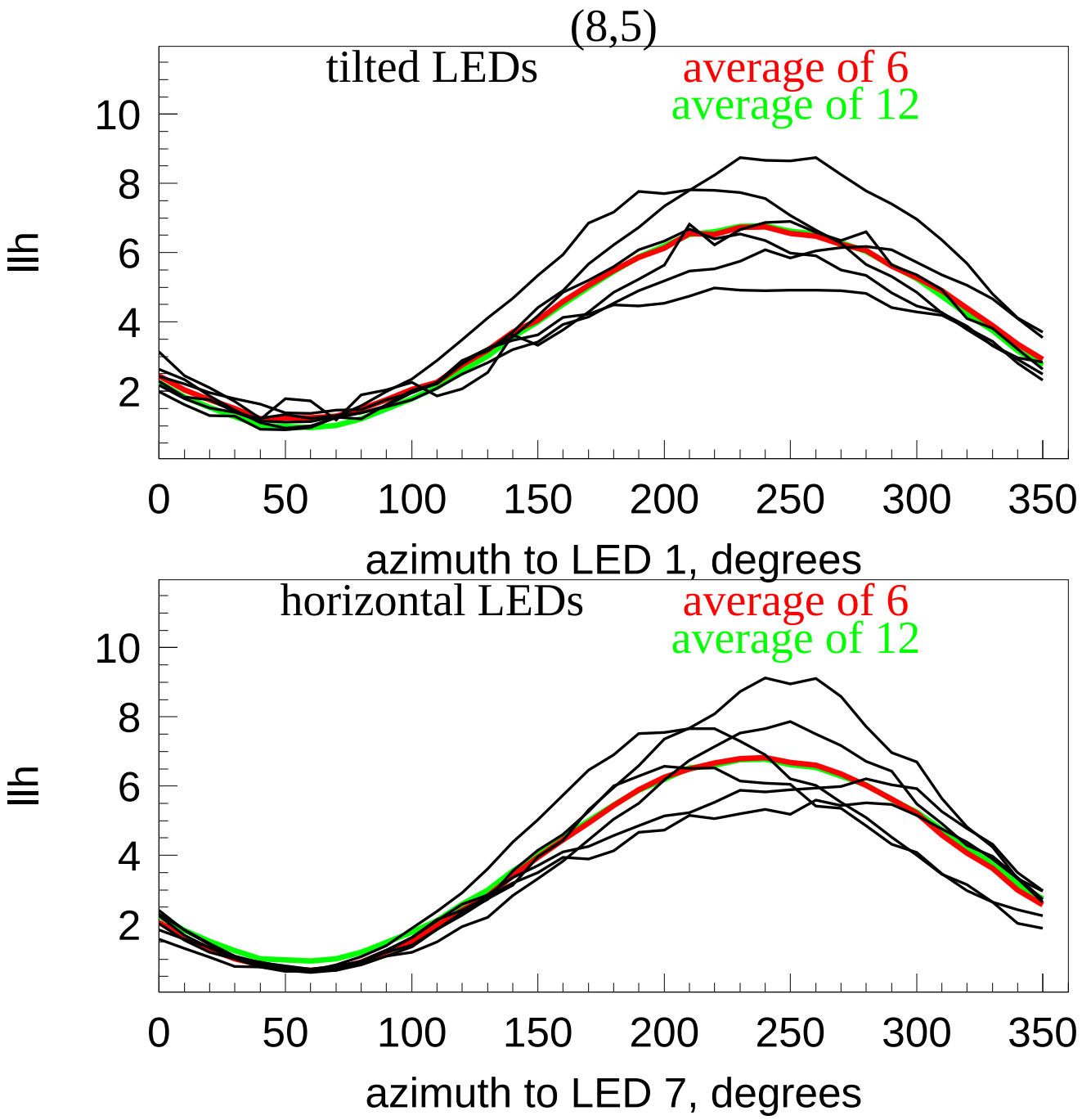

(7,8)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
2
9
3
130
6
12
4
5
10
11

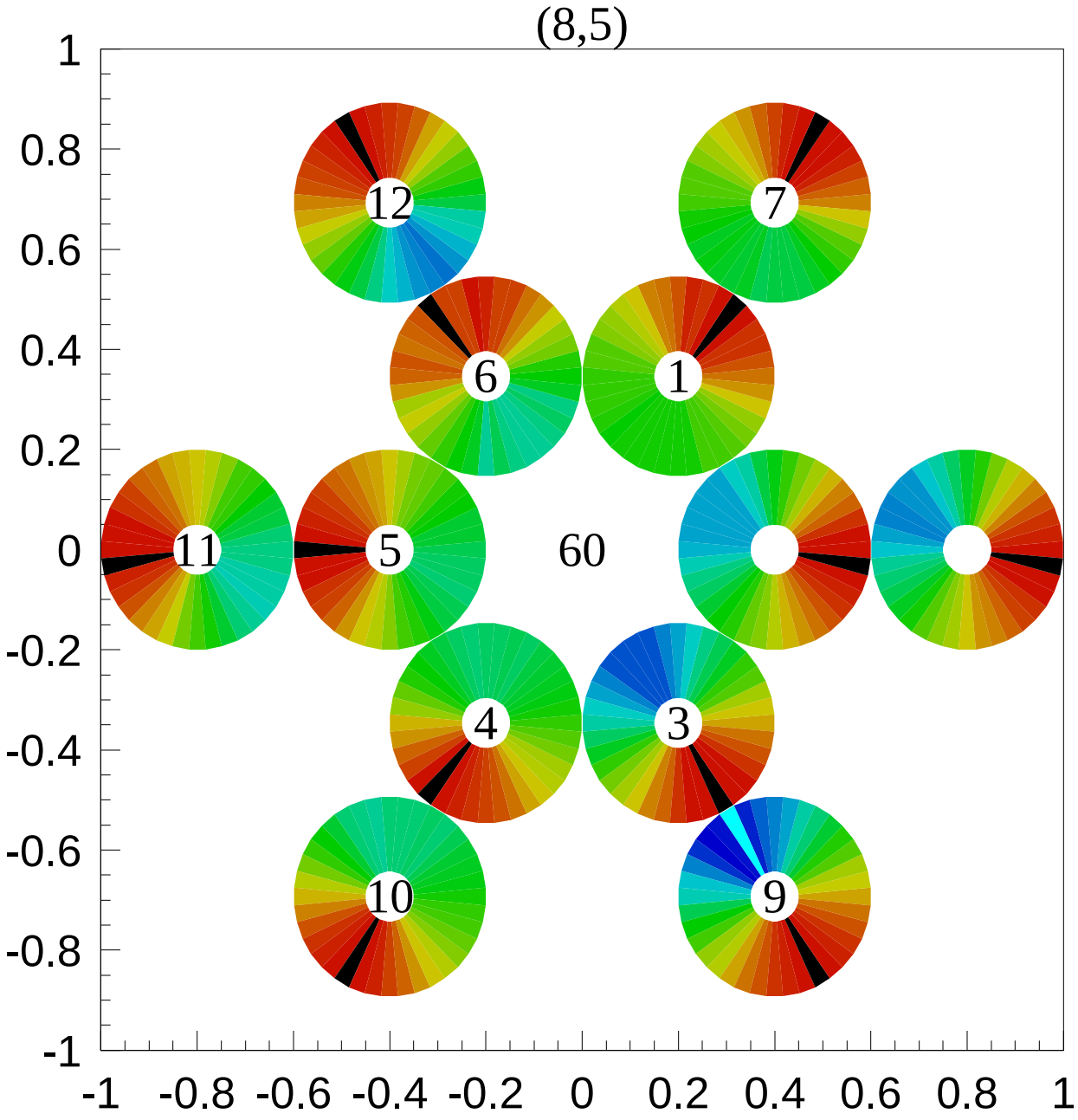

(7,56)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

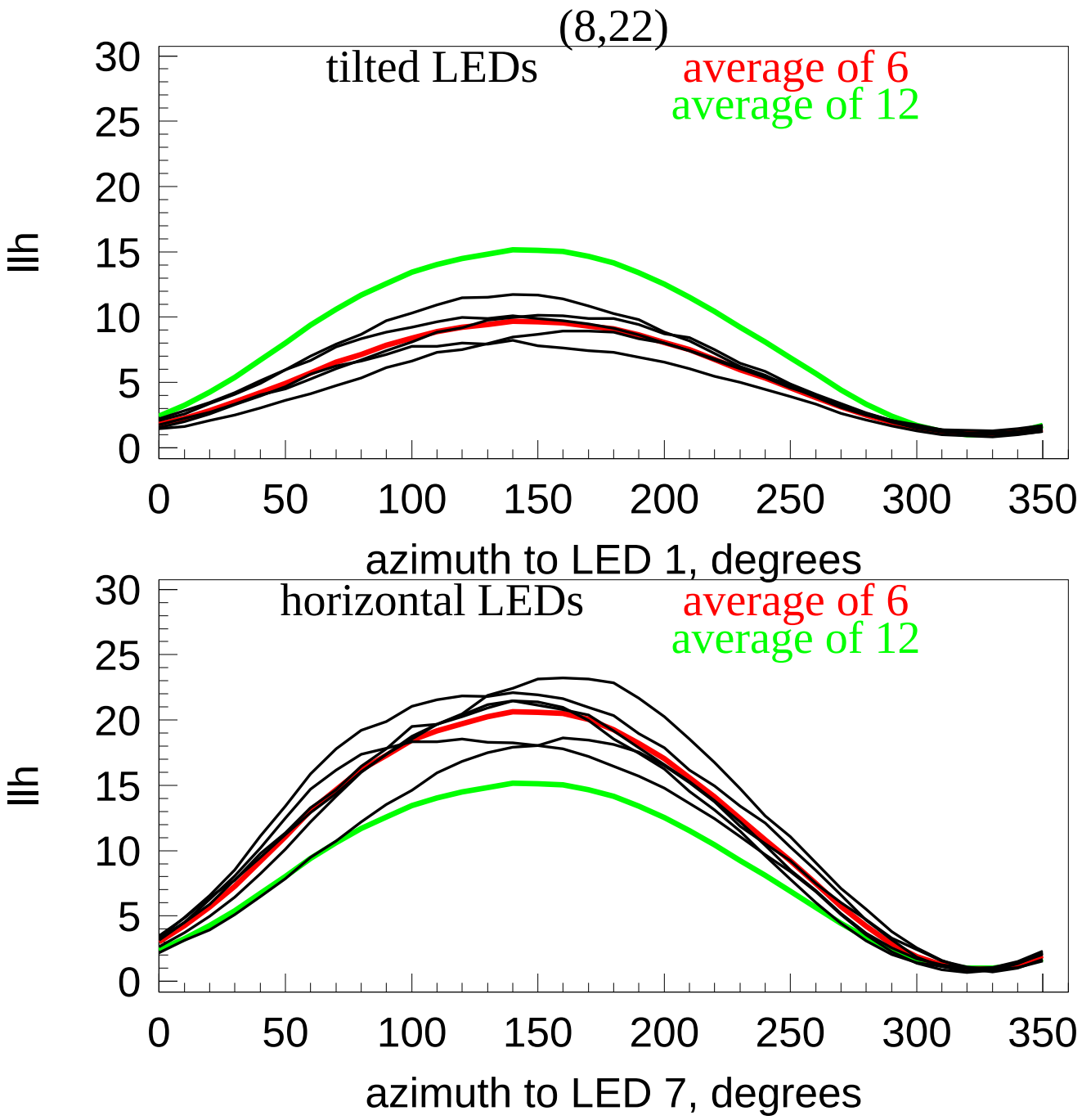

(7,56)
11
5
320
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

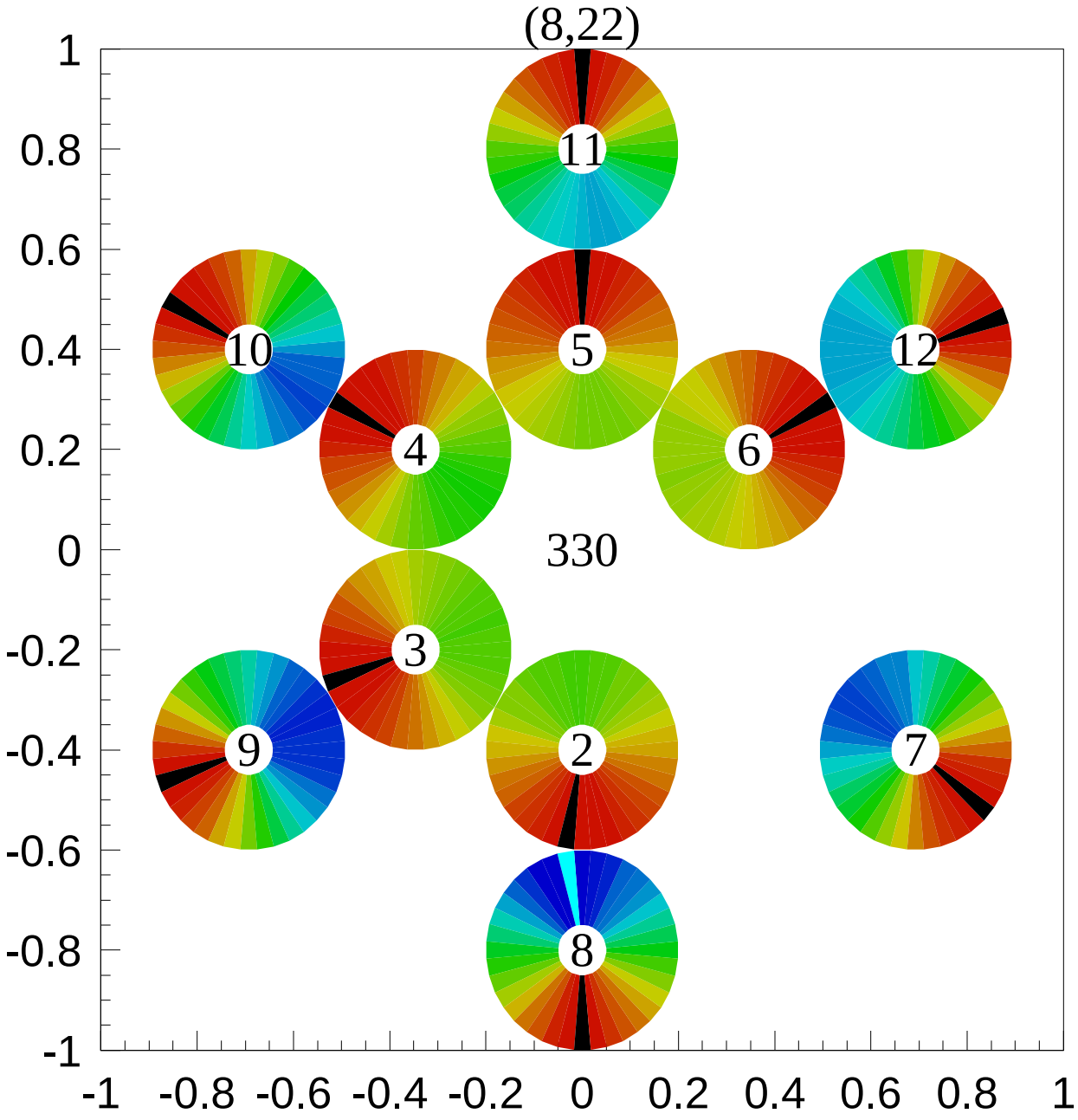

(8,1)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

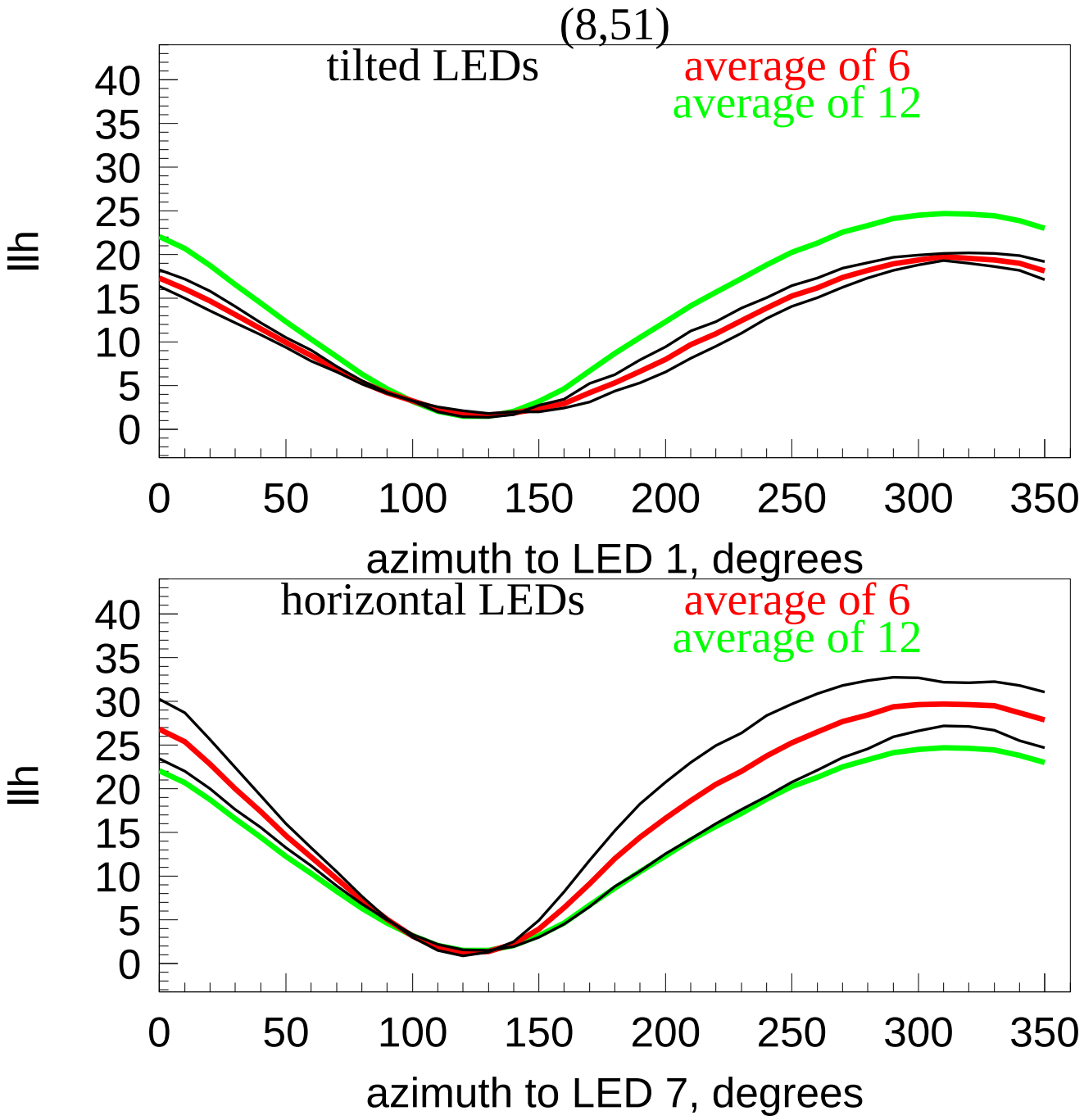

(8,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
9
4
3
11
5
260
2
8
6
12
7

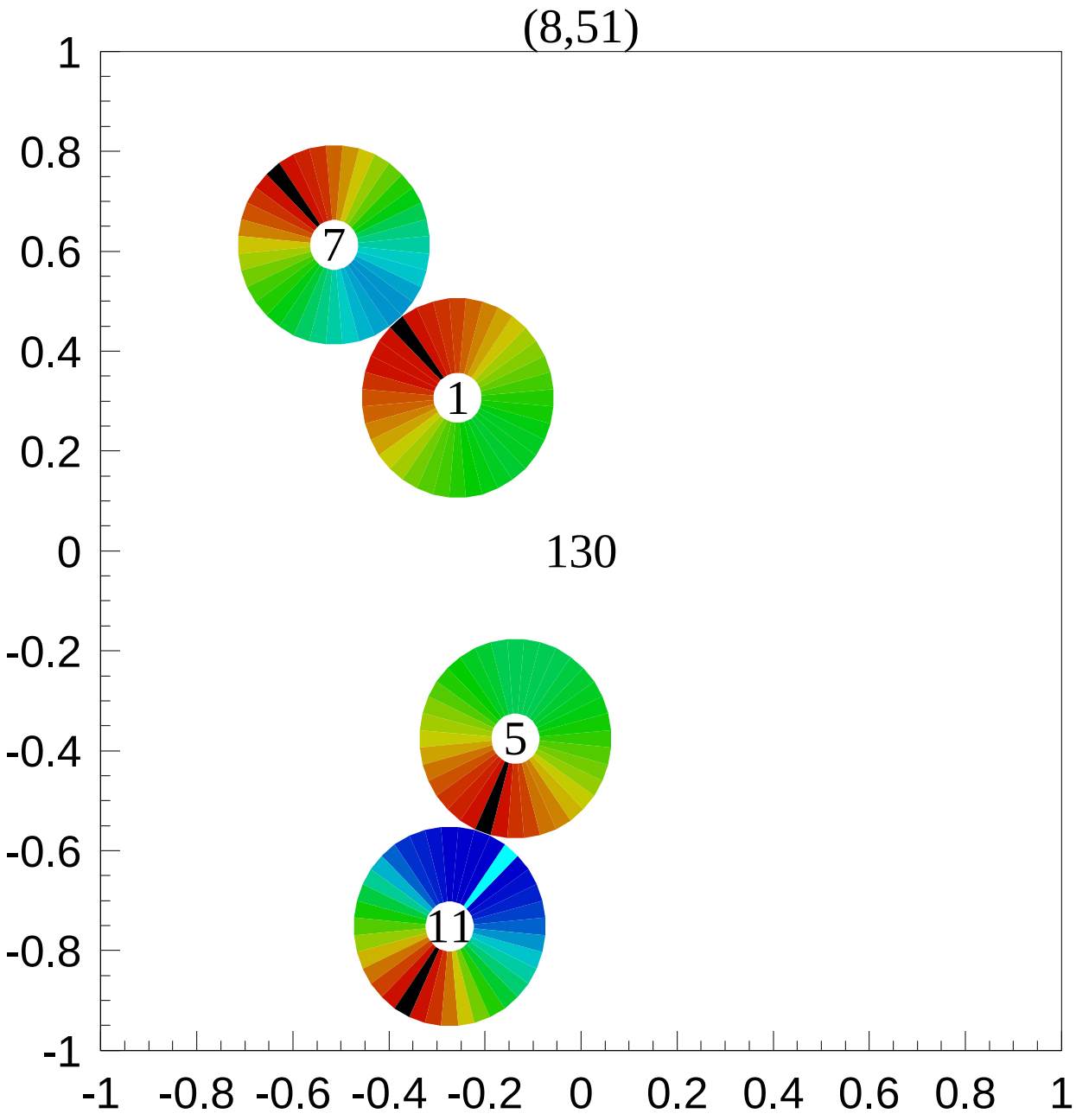

(8,5)
tilted LEDs
average of 6
average of 12
Ilh
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

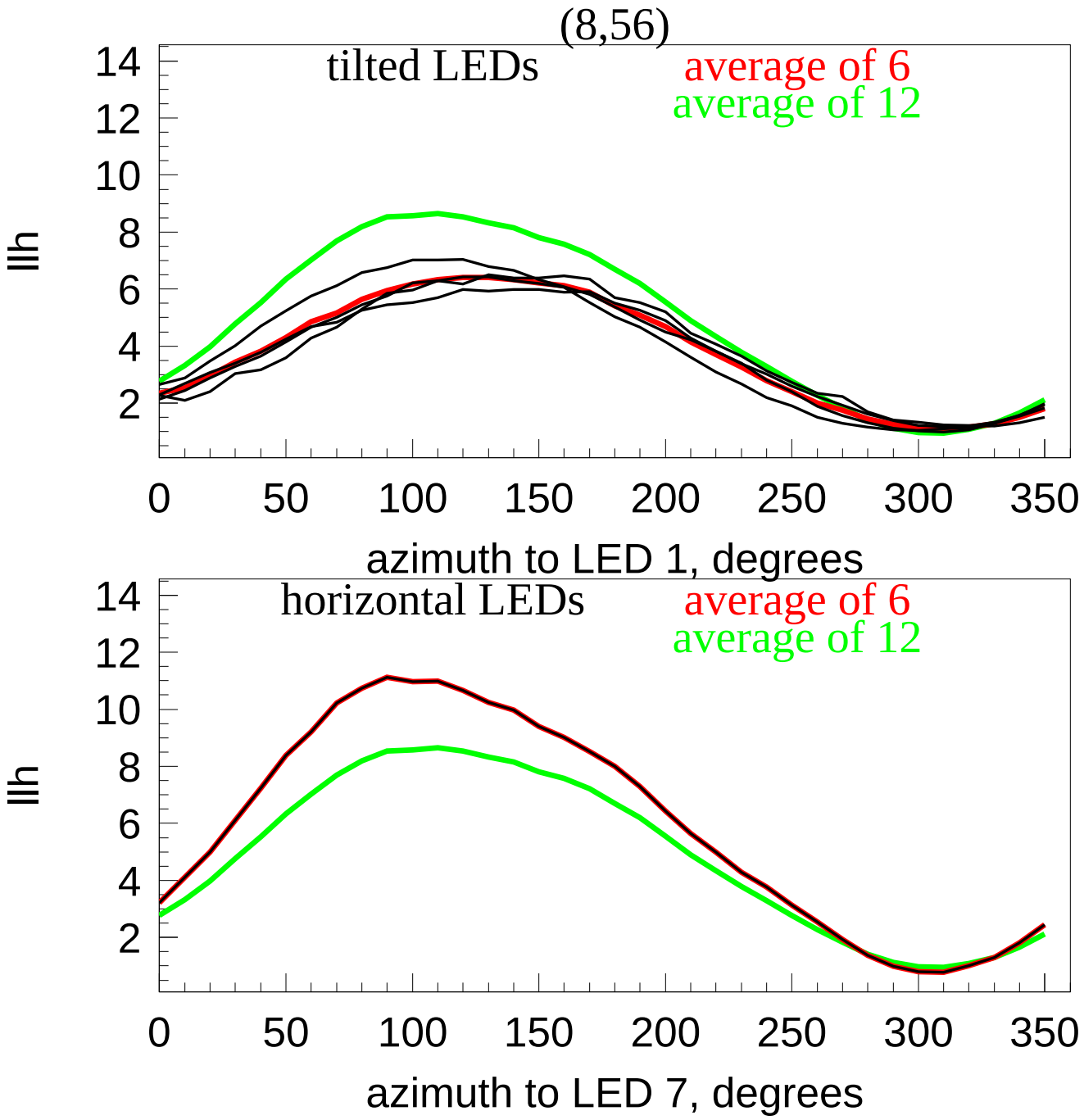

(8,5)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
7
6
1
11
5
60
4
3
10
9

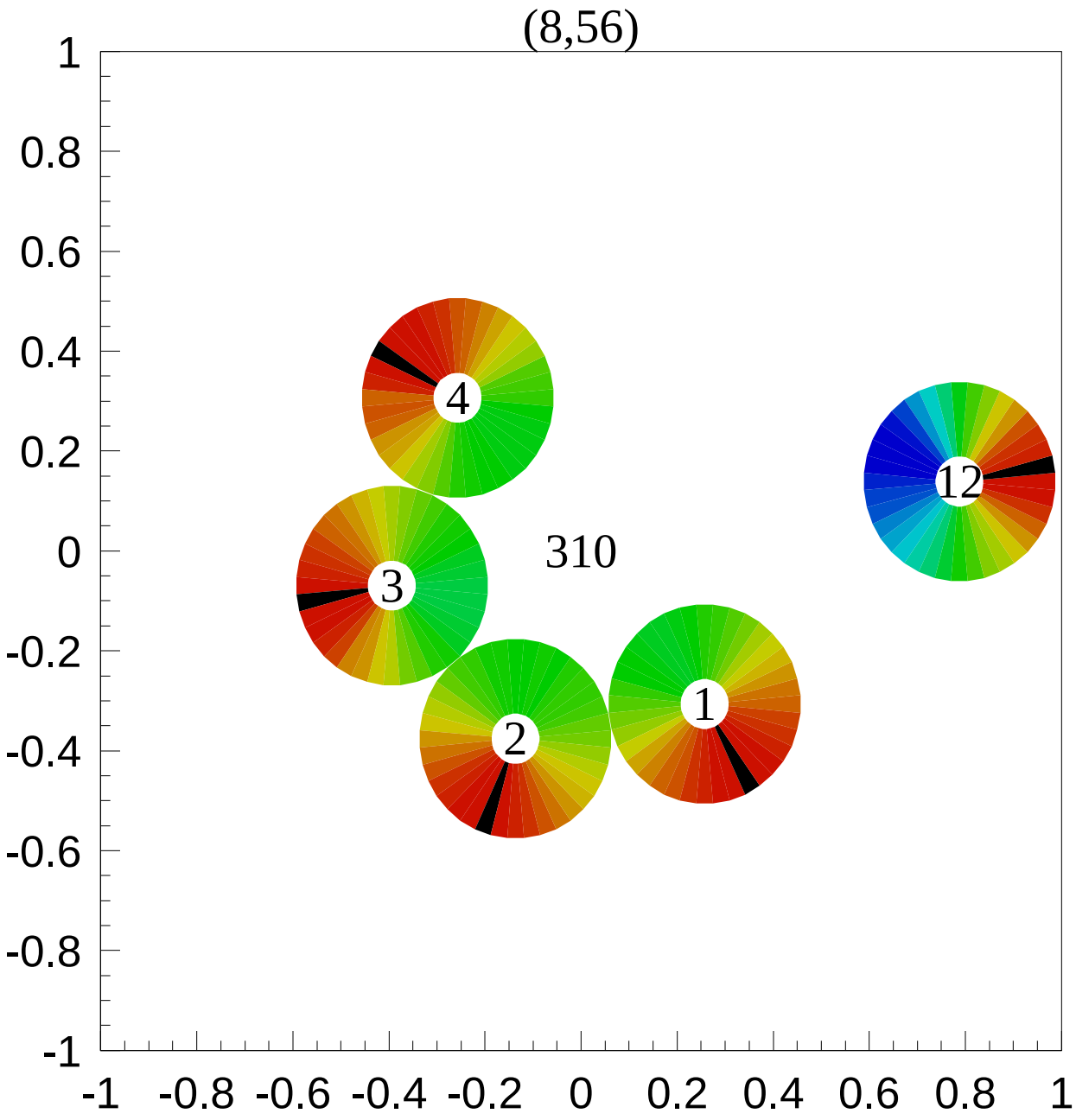

(8,22)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

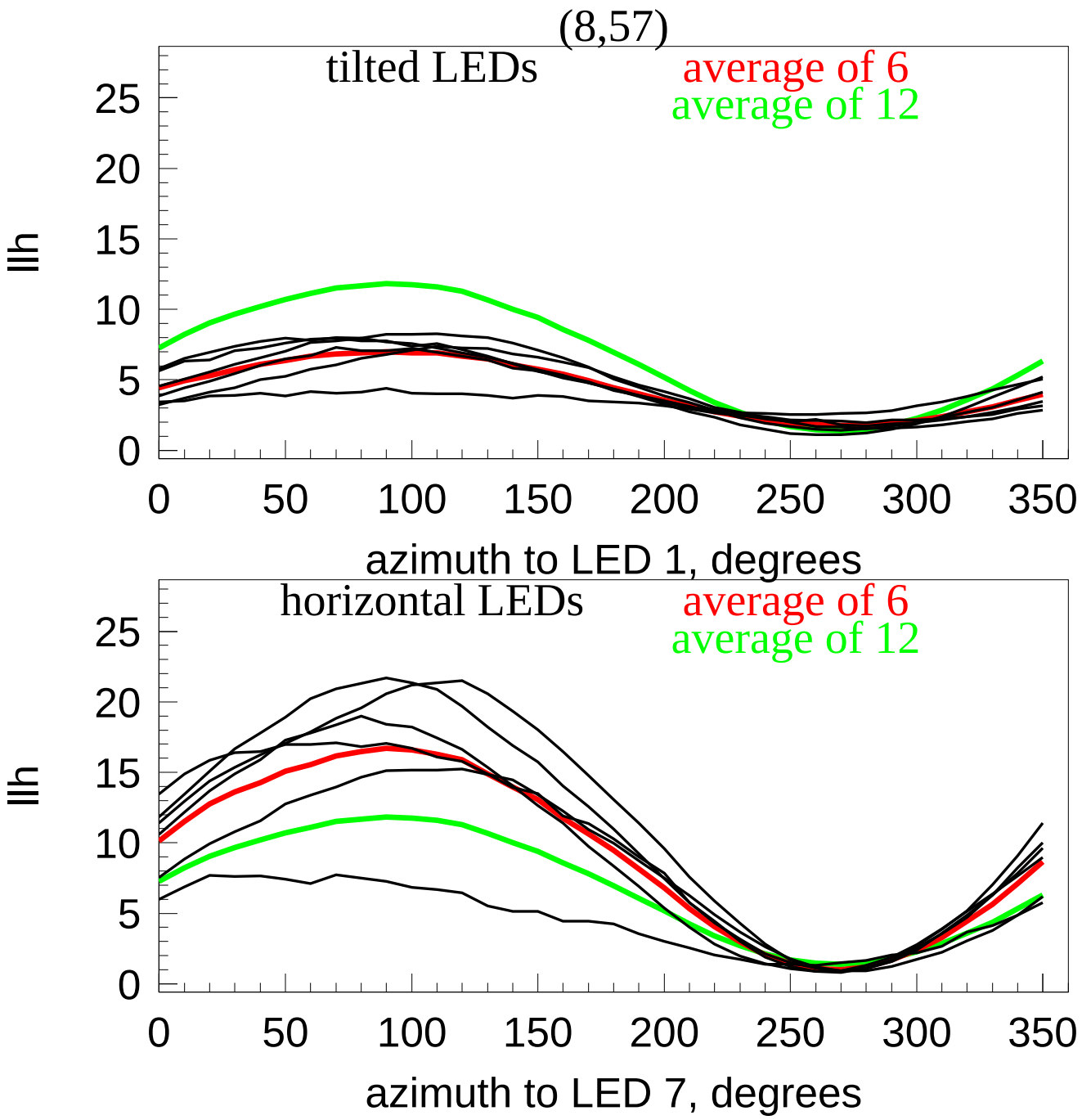

(8,22)
11
10
5
12
4
6
330
3
9
2
7
8
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

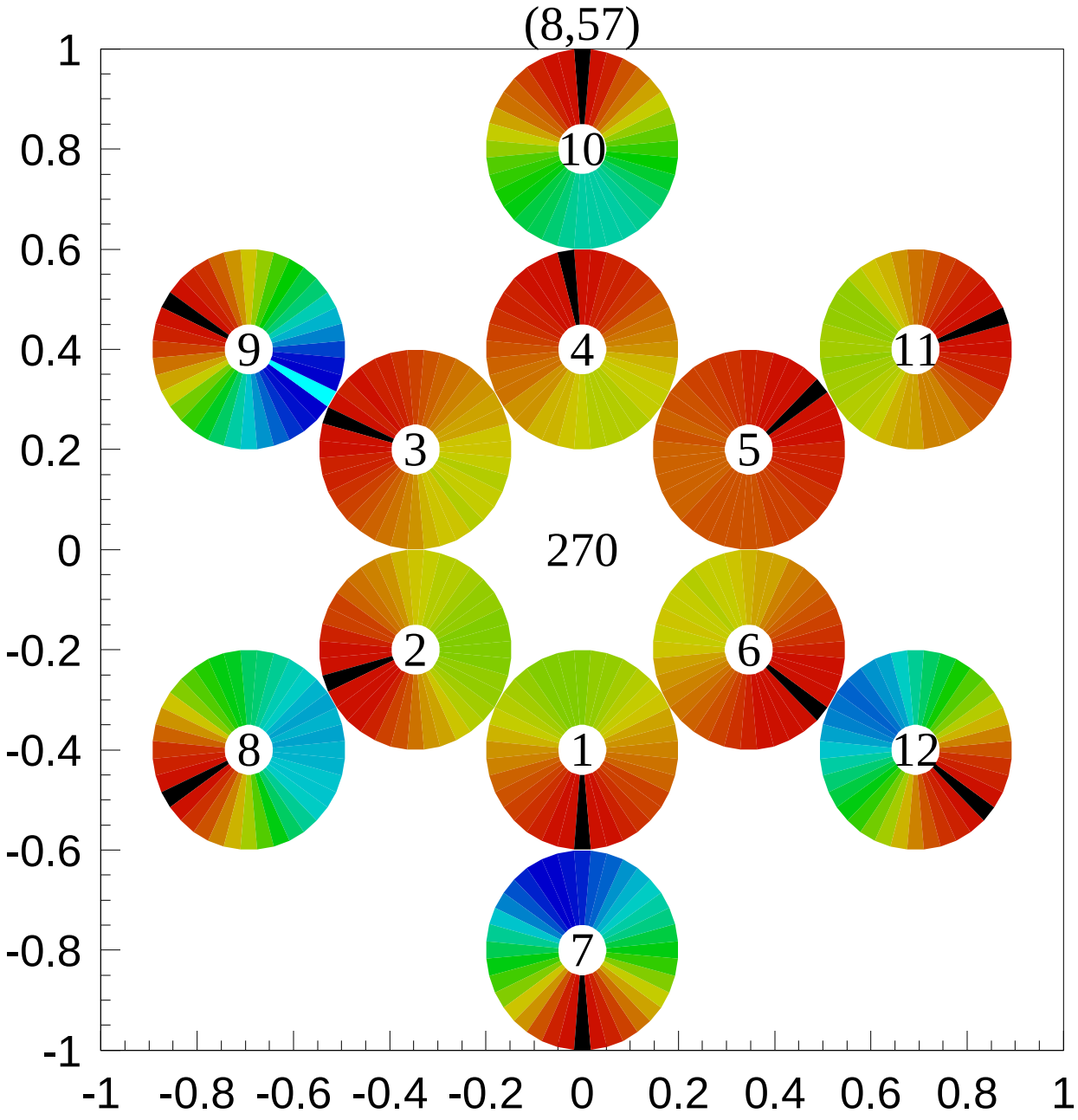

(8,51)
tilted LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

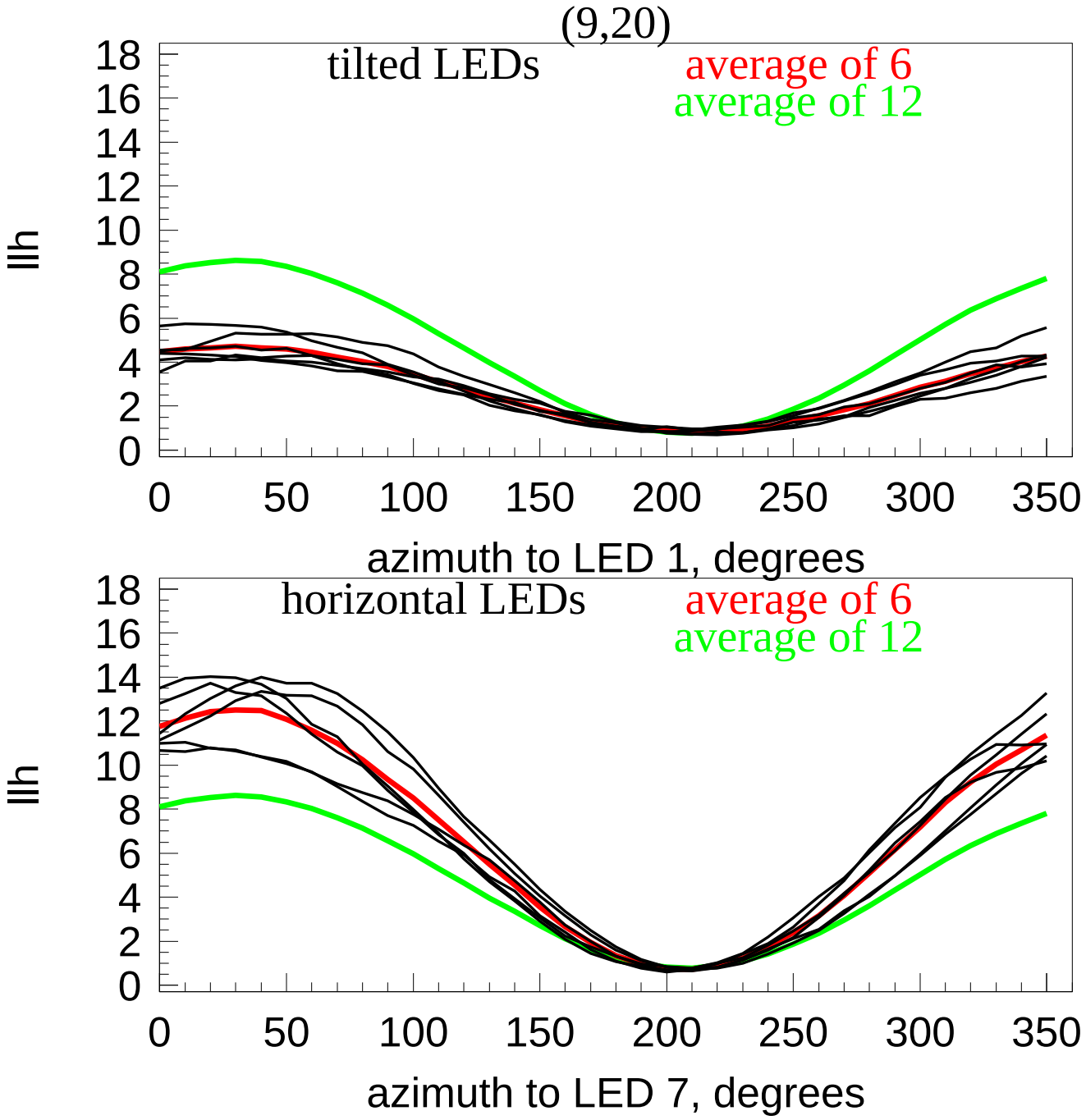

(8,51)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
130
5
11

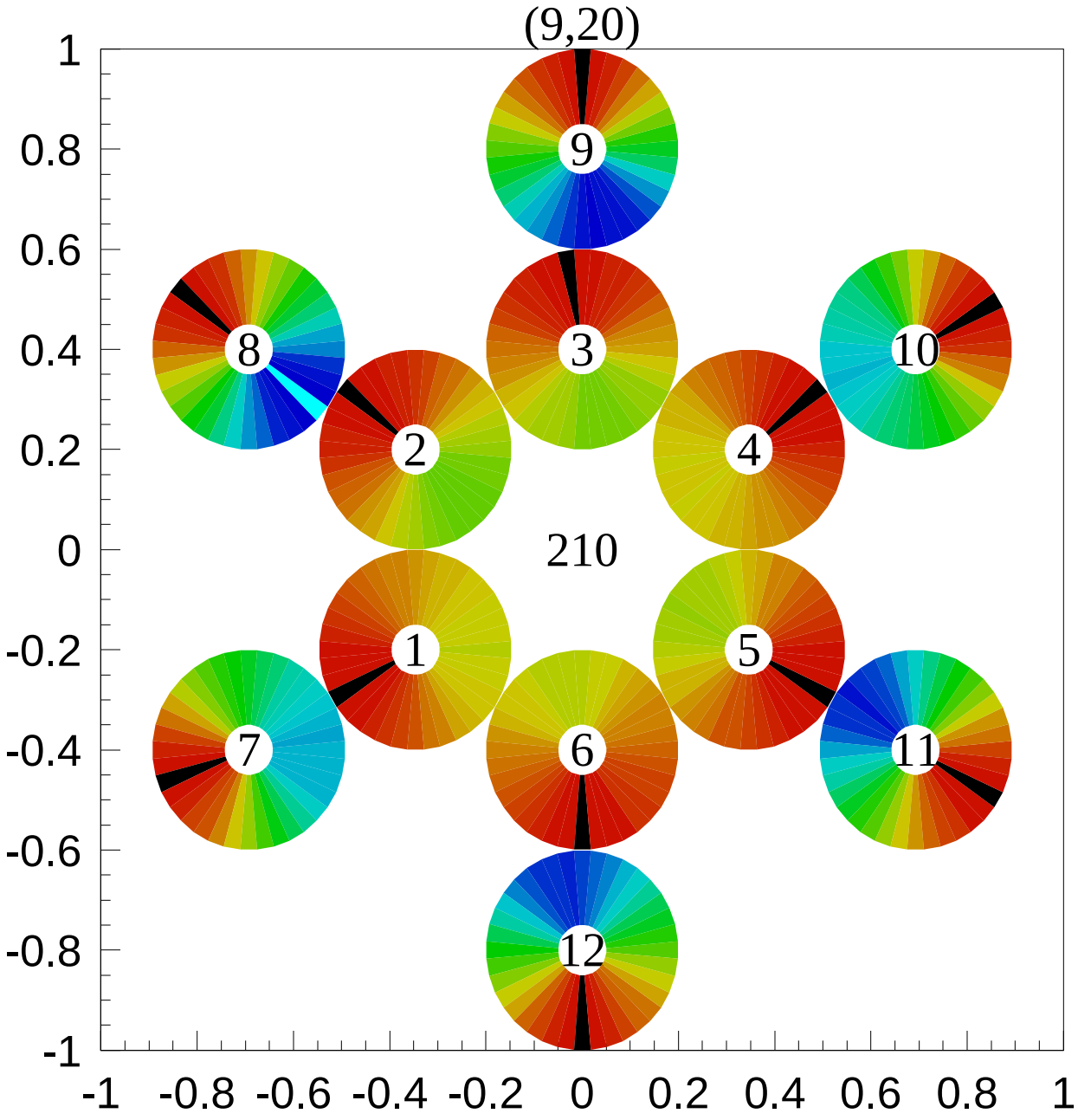

(8,56)
tilted LEDs
average of 6
average of 12
llh
14
12
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
14
12
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

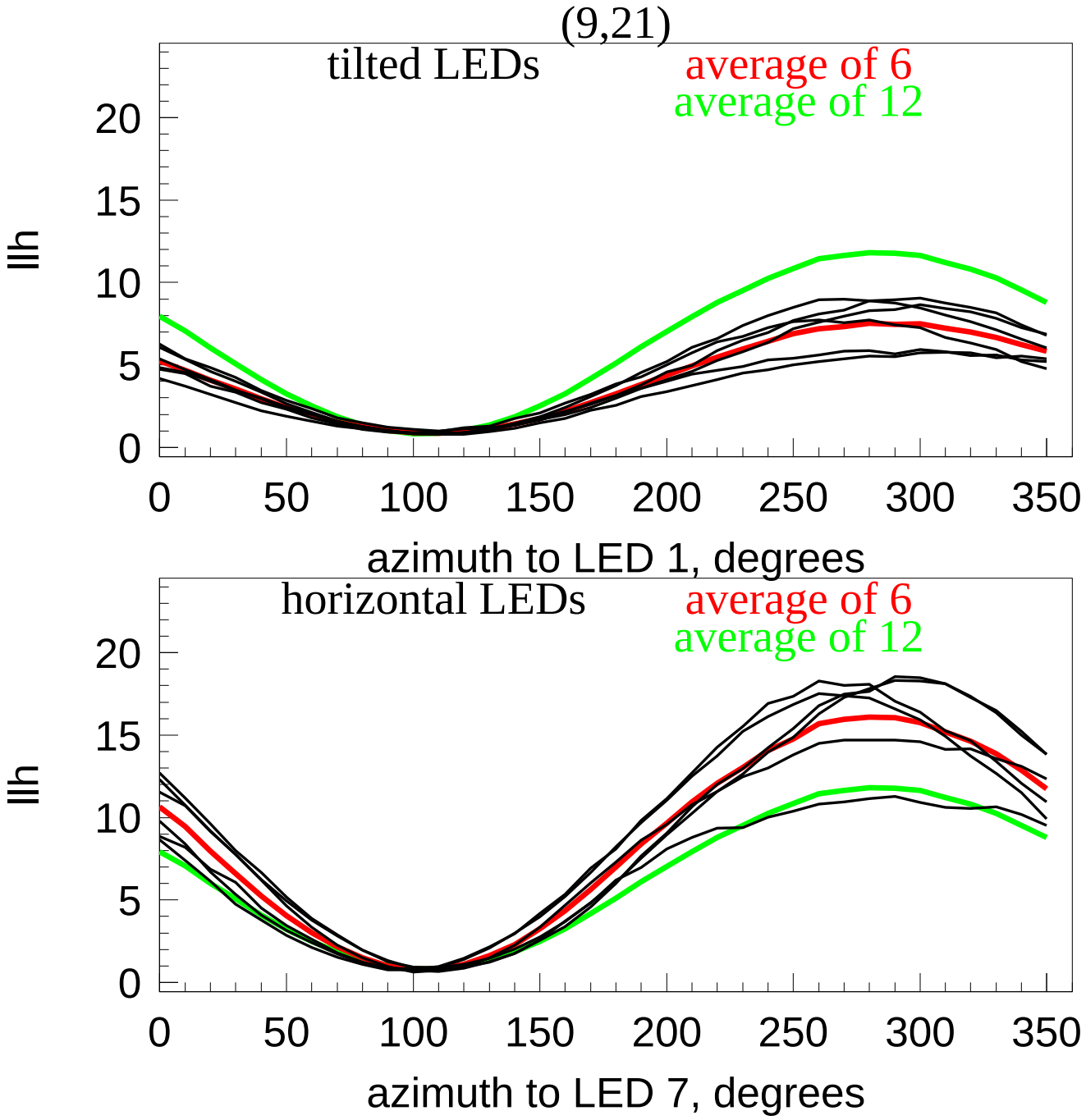

(8,56)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
4
12
310
3
1
2

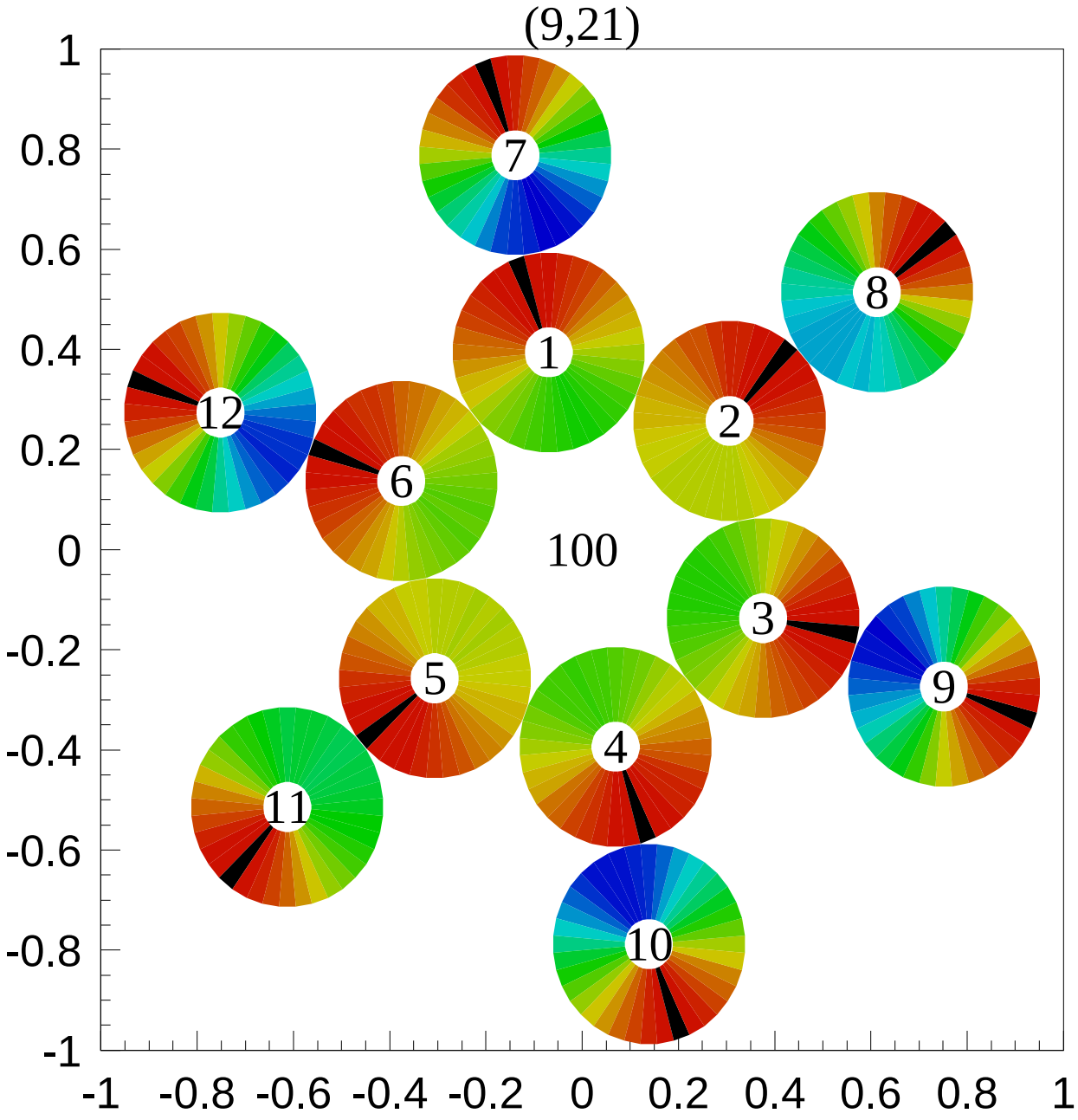

(8,57)
tilted LEDs
average of 6
average of 12
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

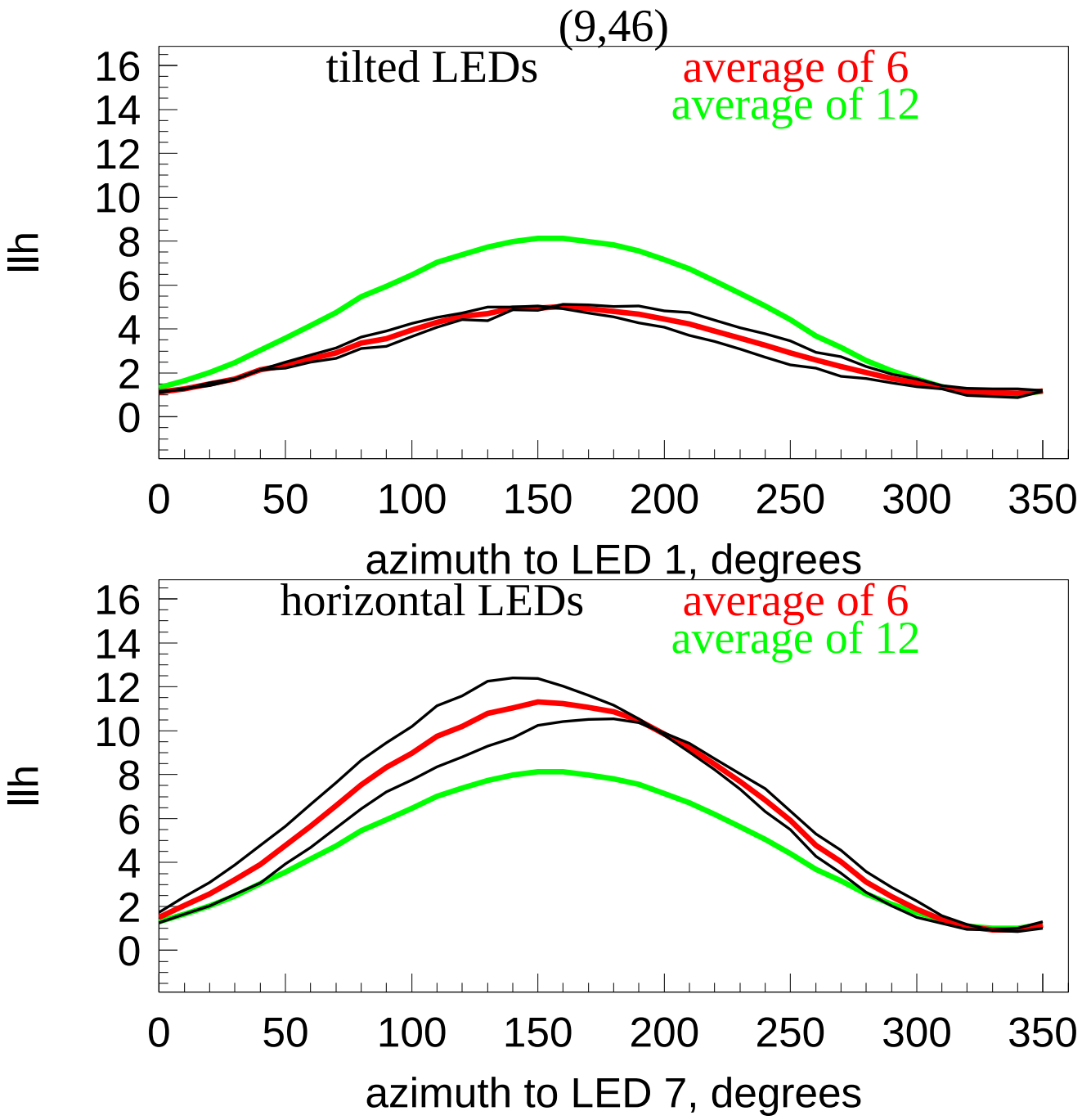

(8,57)
10
9
4
11
3
5
270
2
6
8
1
12
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

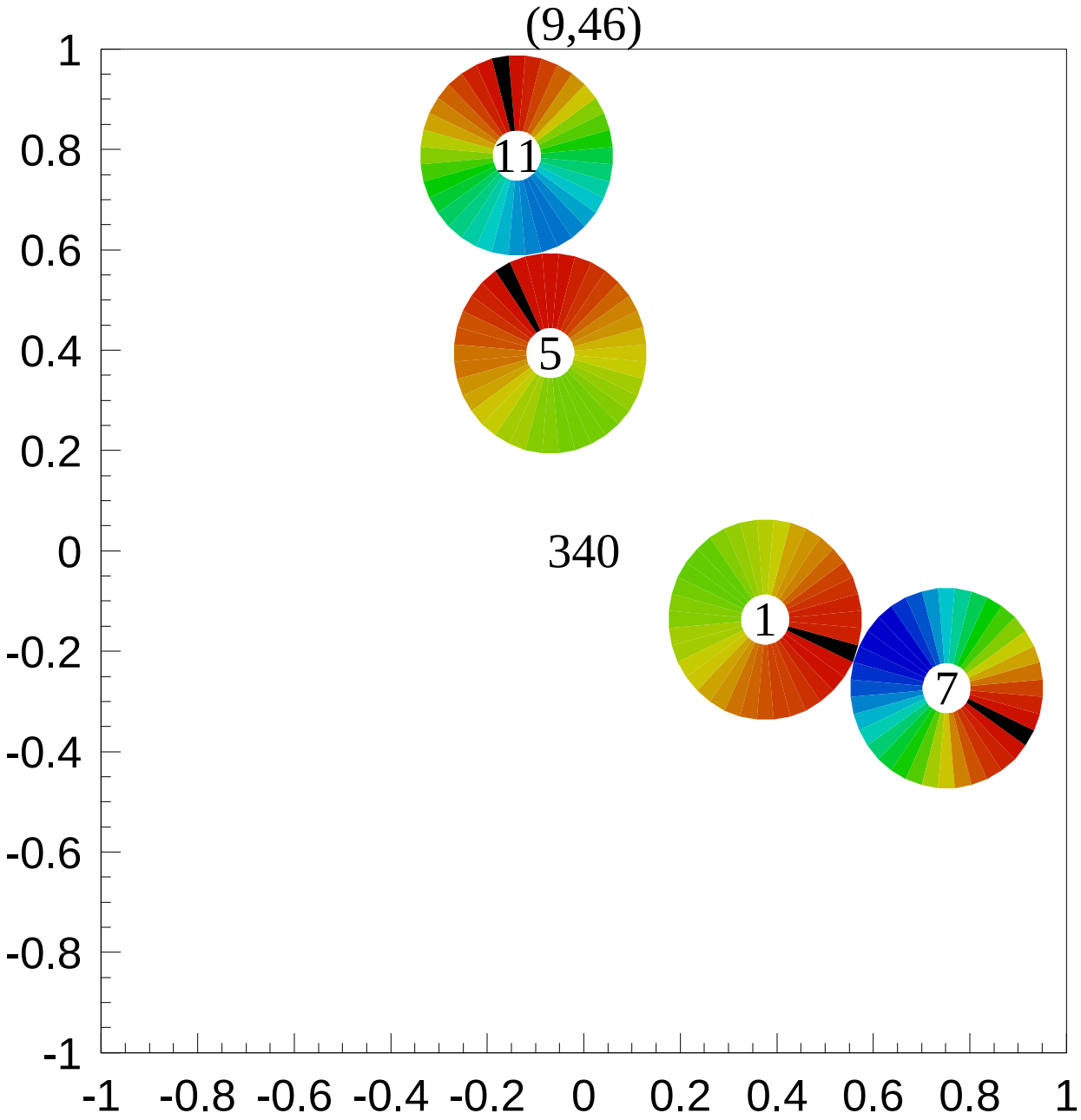

(9,20)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

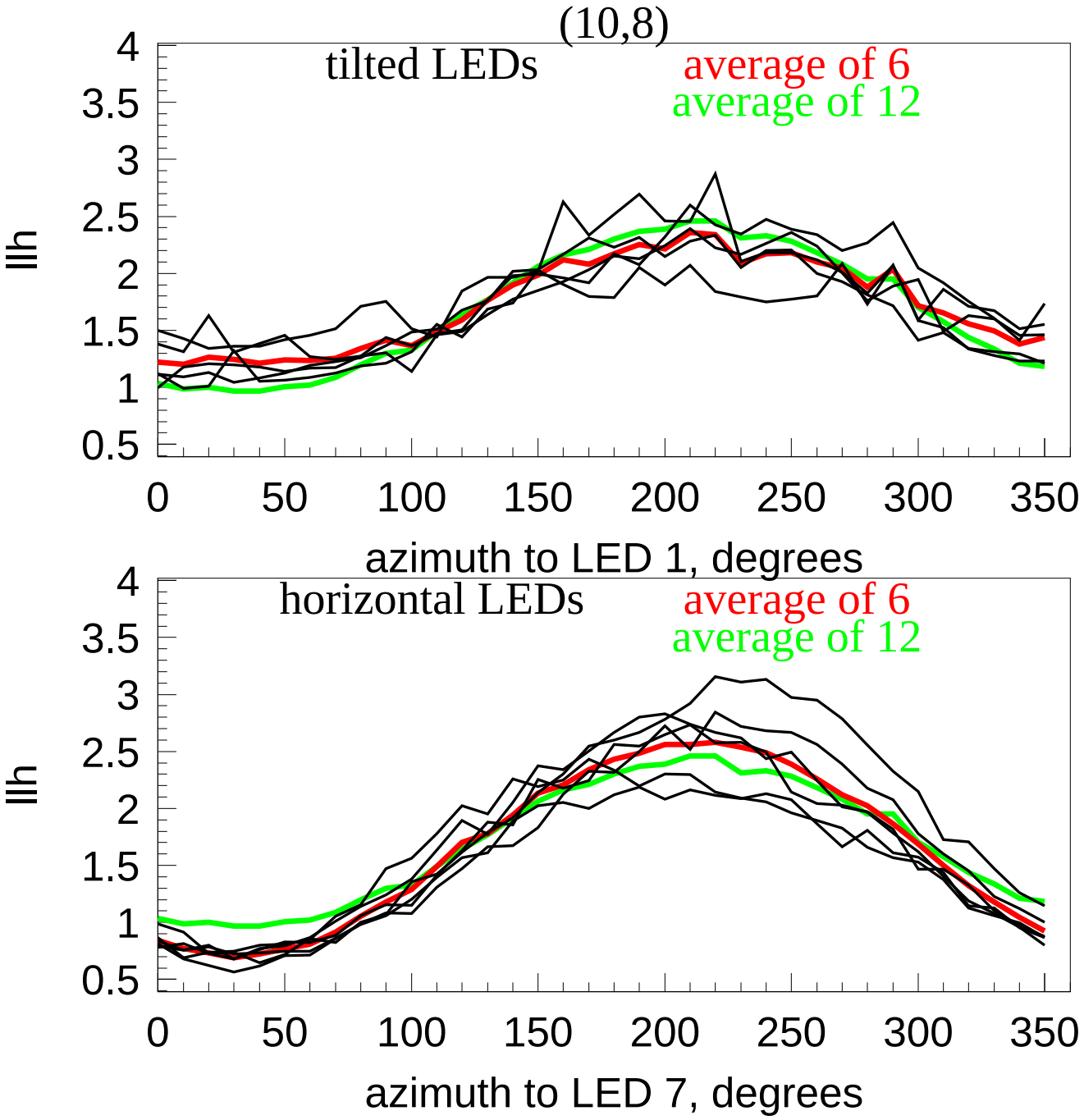

(9,20)
9
8
3
10
2
4
210
1
5
7
6
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

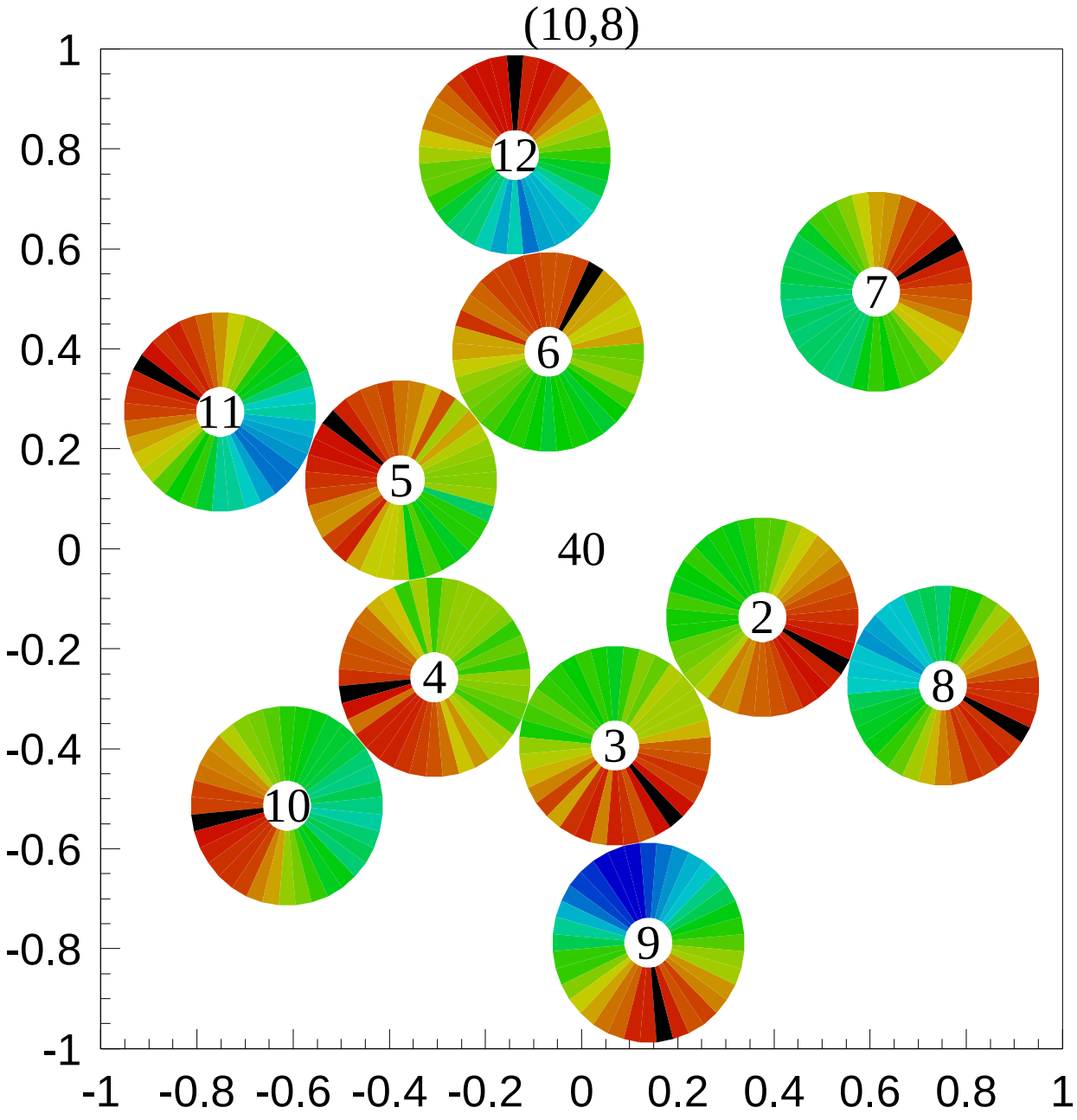

(9,21)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

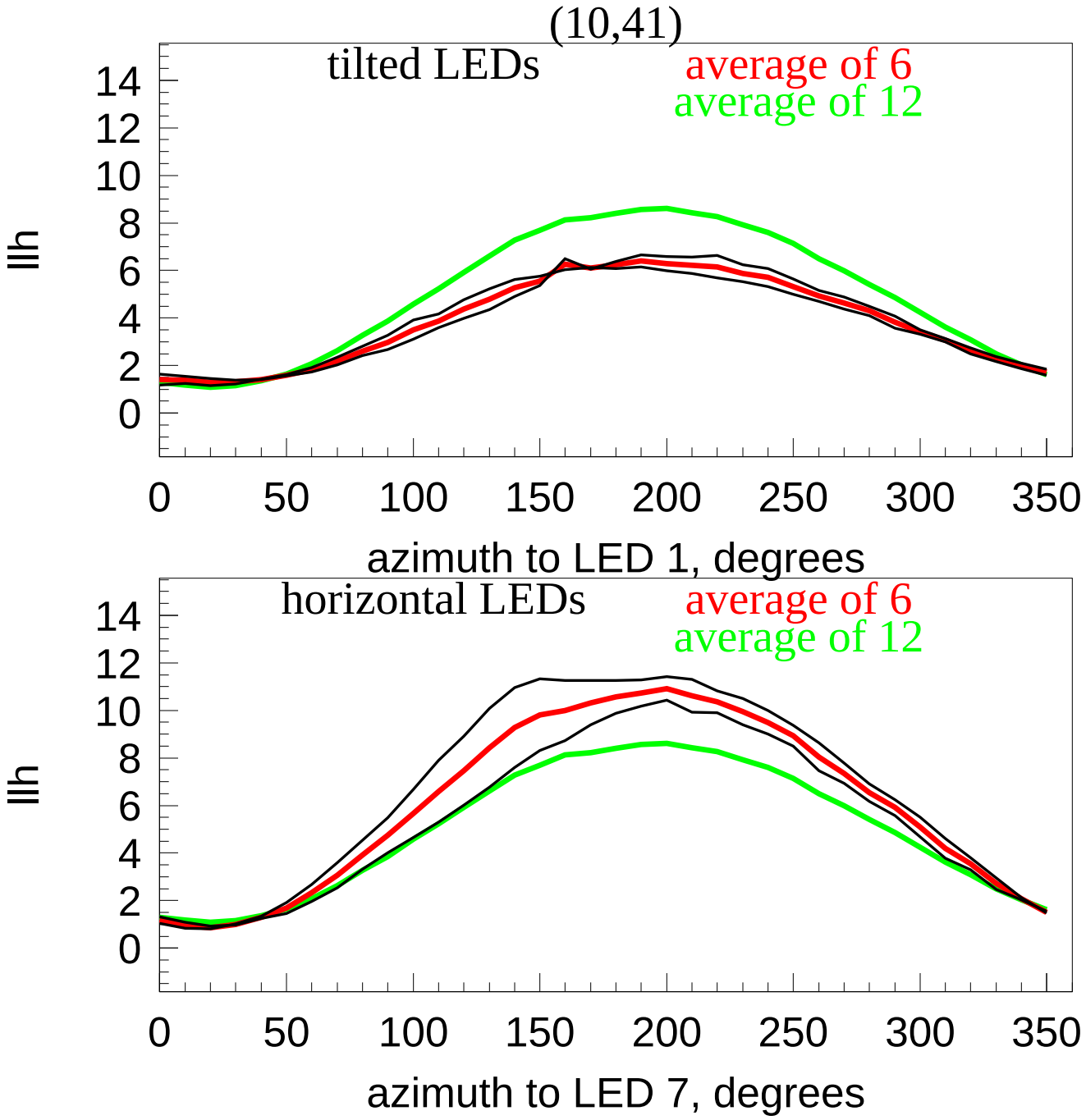

(9,21)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
8
12
2
6
100
3
9
5
4
11
10

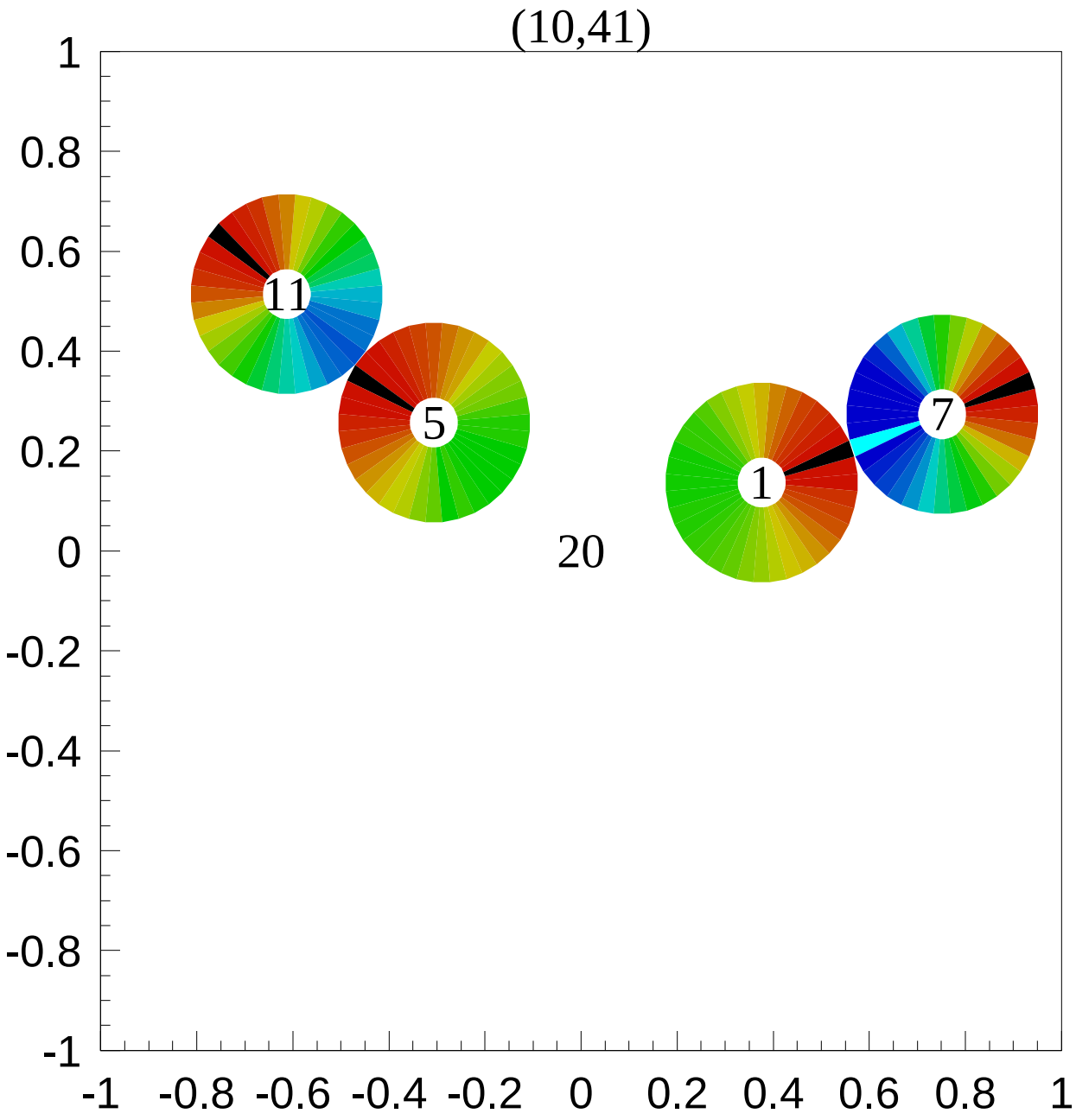

(9,46)
tilted LEDs
average of 6
average of 12
llh
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

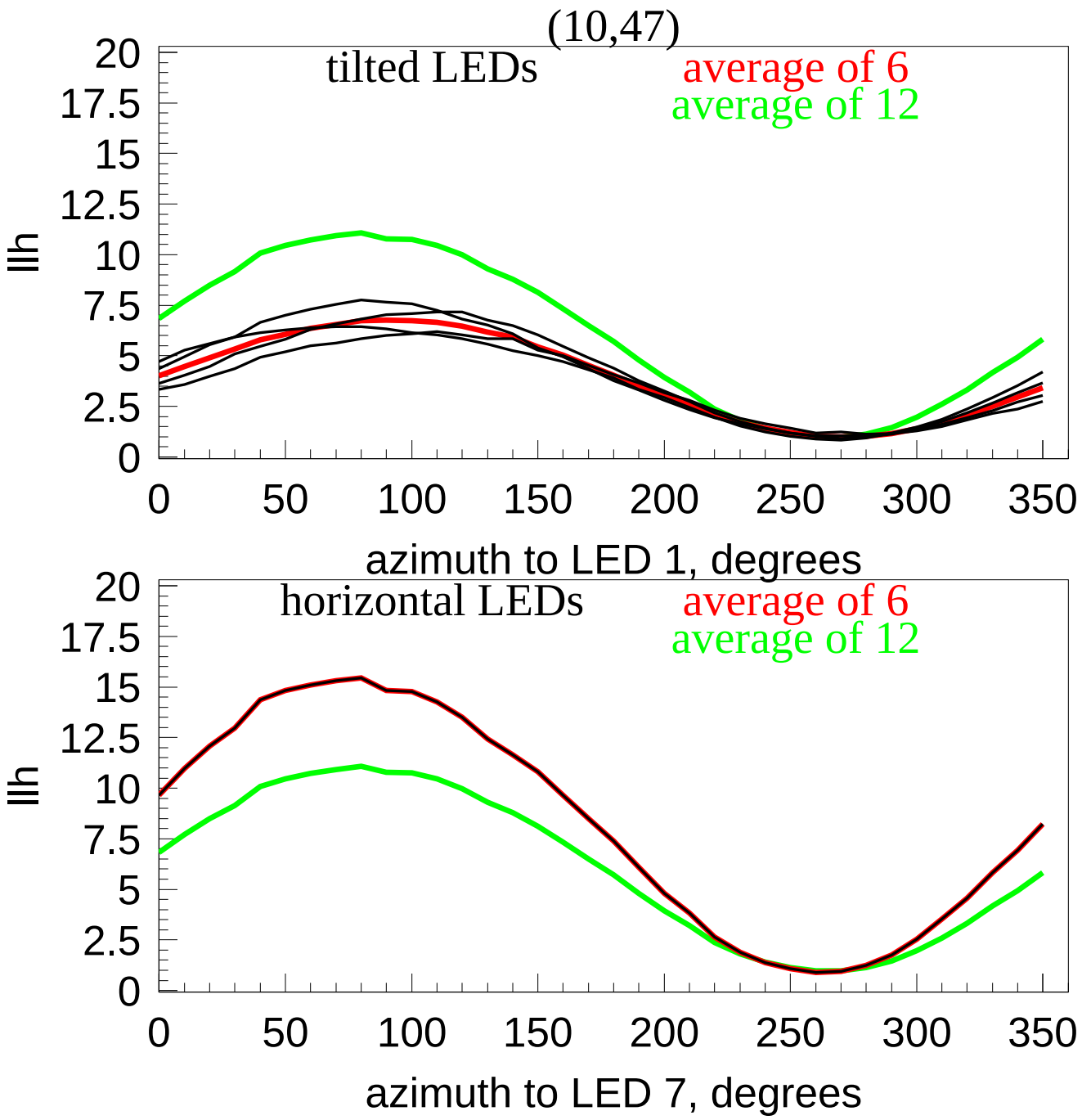

(9,46)
11
5
340
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

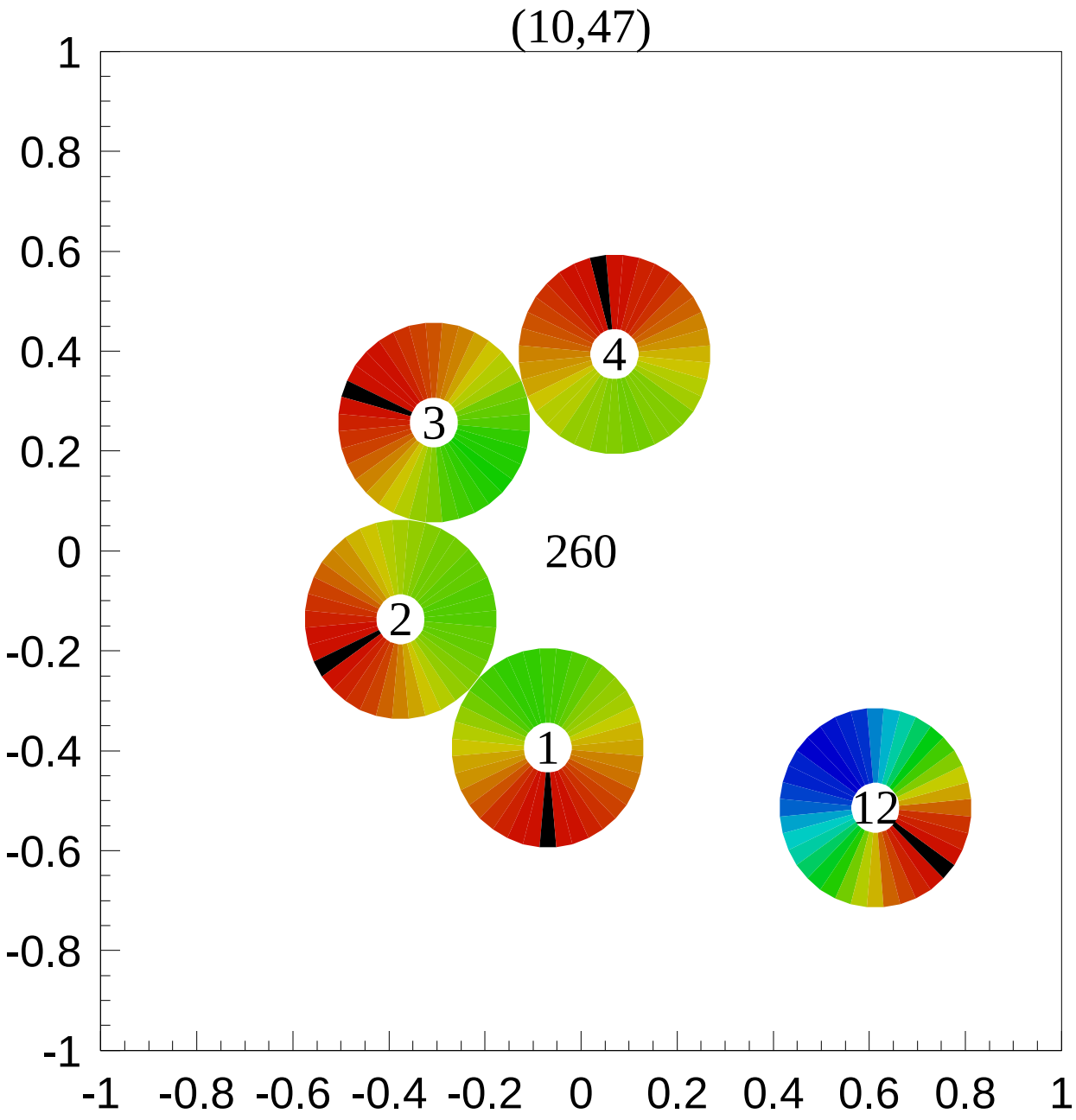

(10,8)
tilted LEDs
average of 6
average of 12
Ilh
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

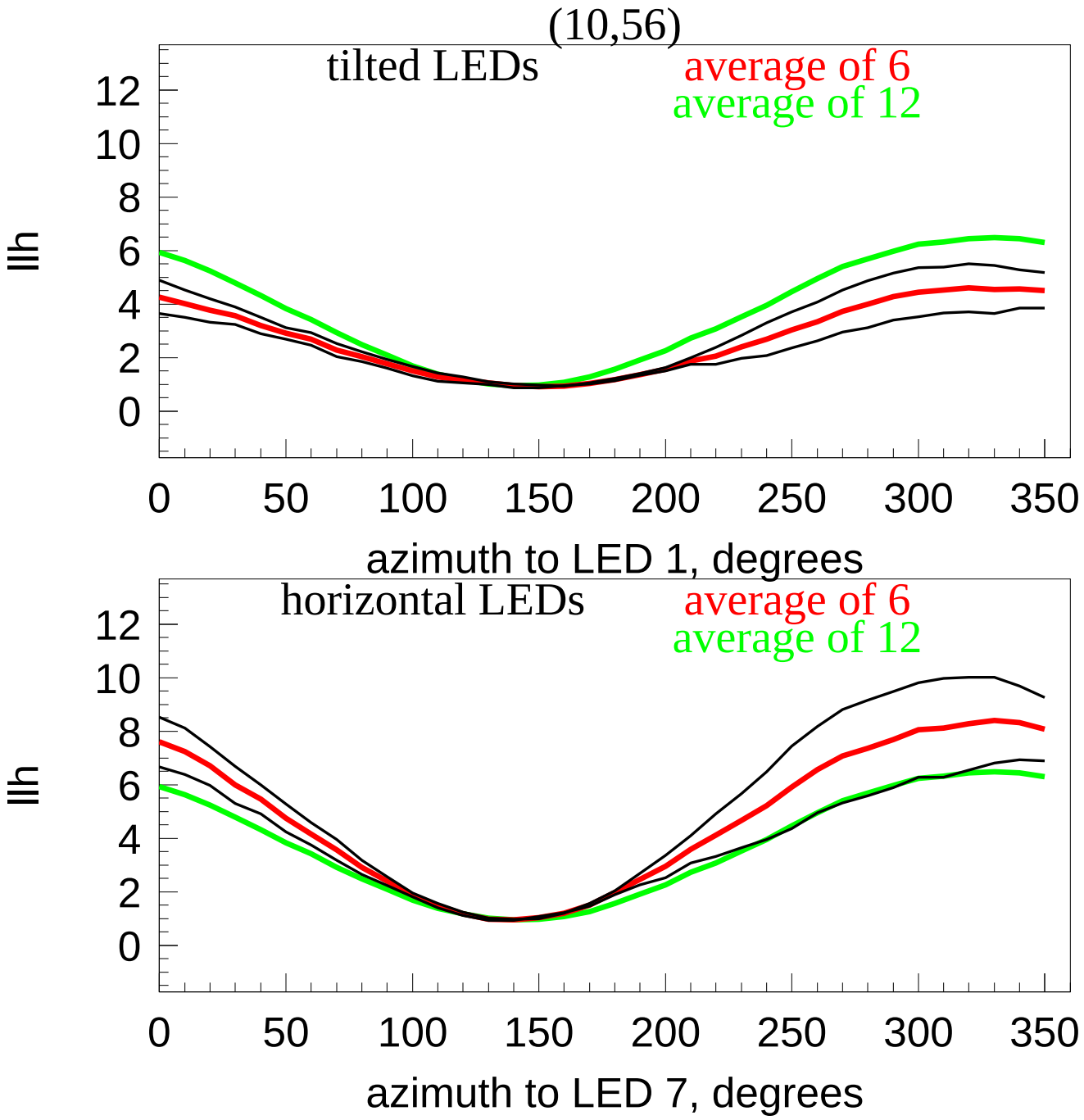

(10,8)
12
7
6
11
5
40
2
8
4
3
10
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

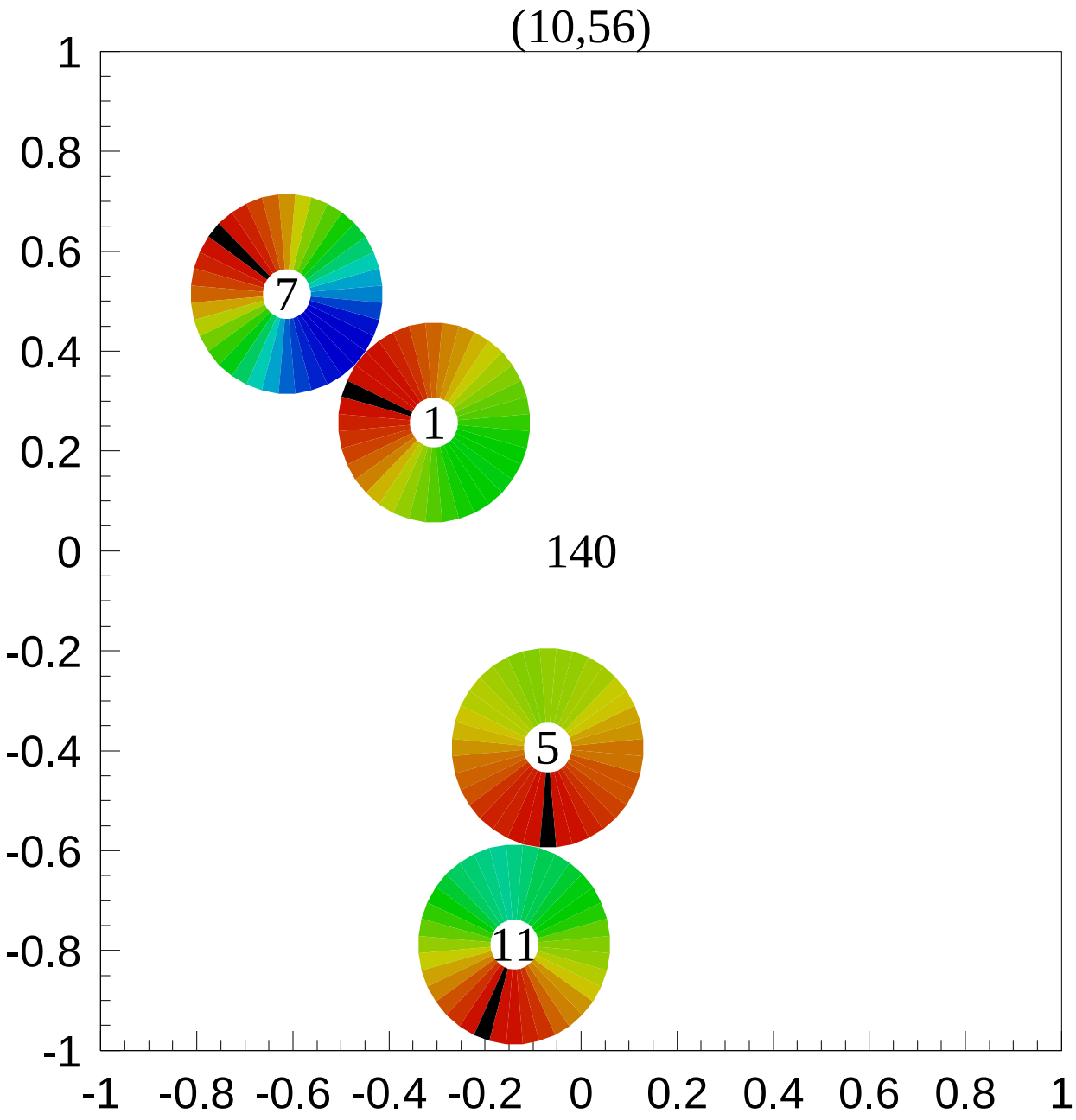

(10,41)
tilted LEDs
average of 6
average of 12
llh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

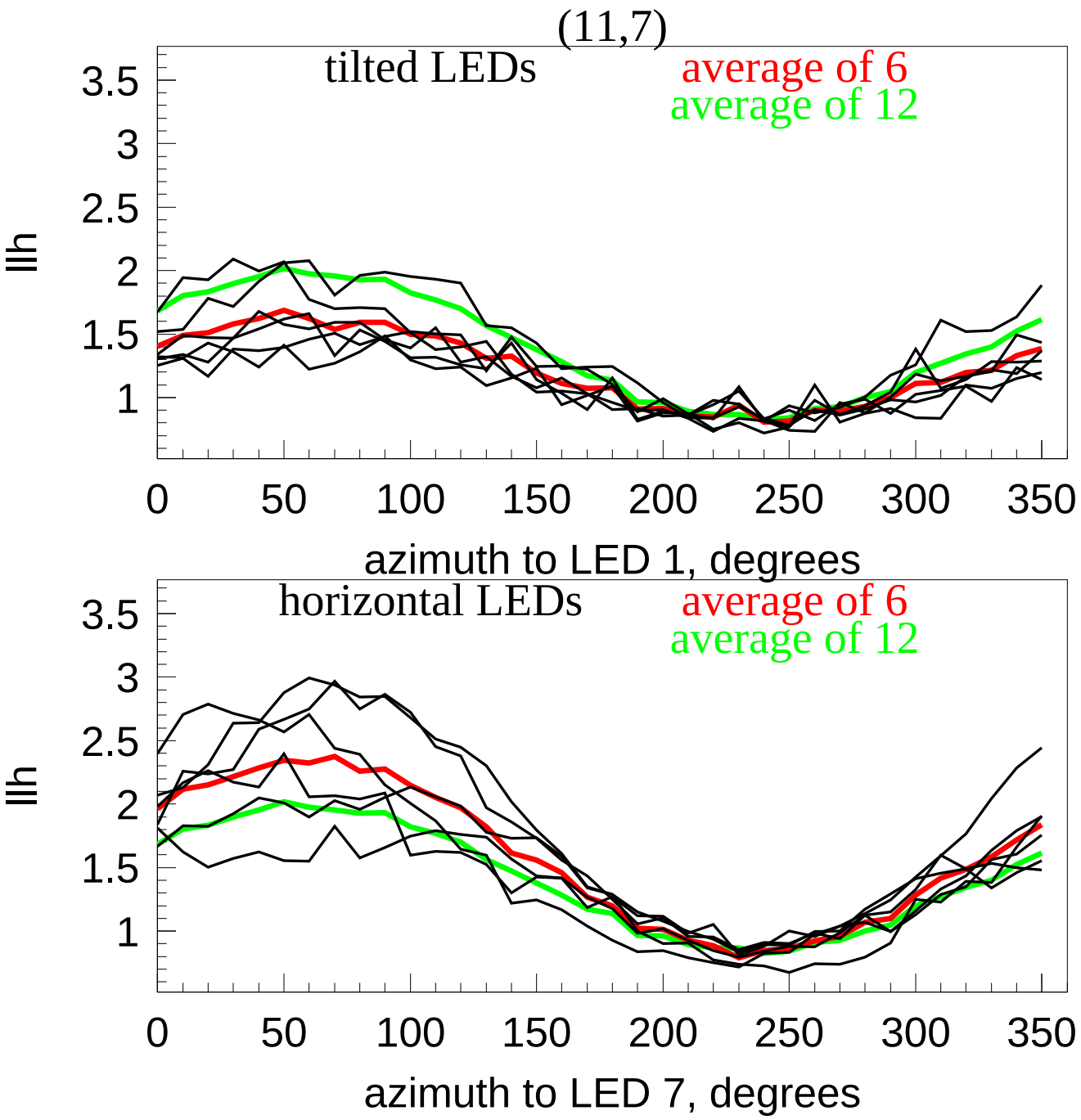

(10,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
20
1
7

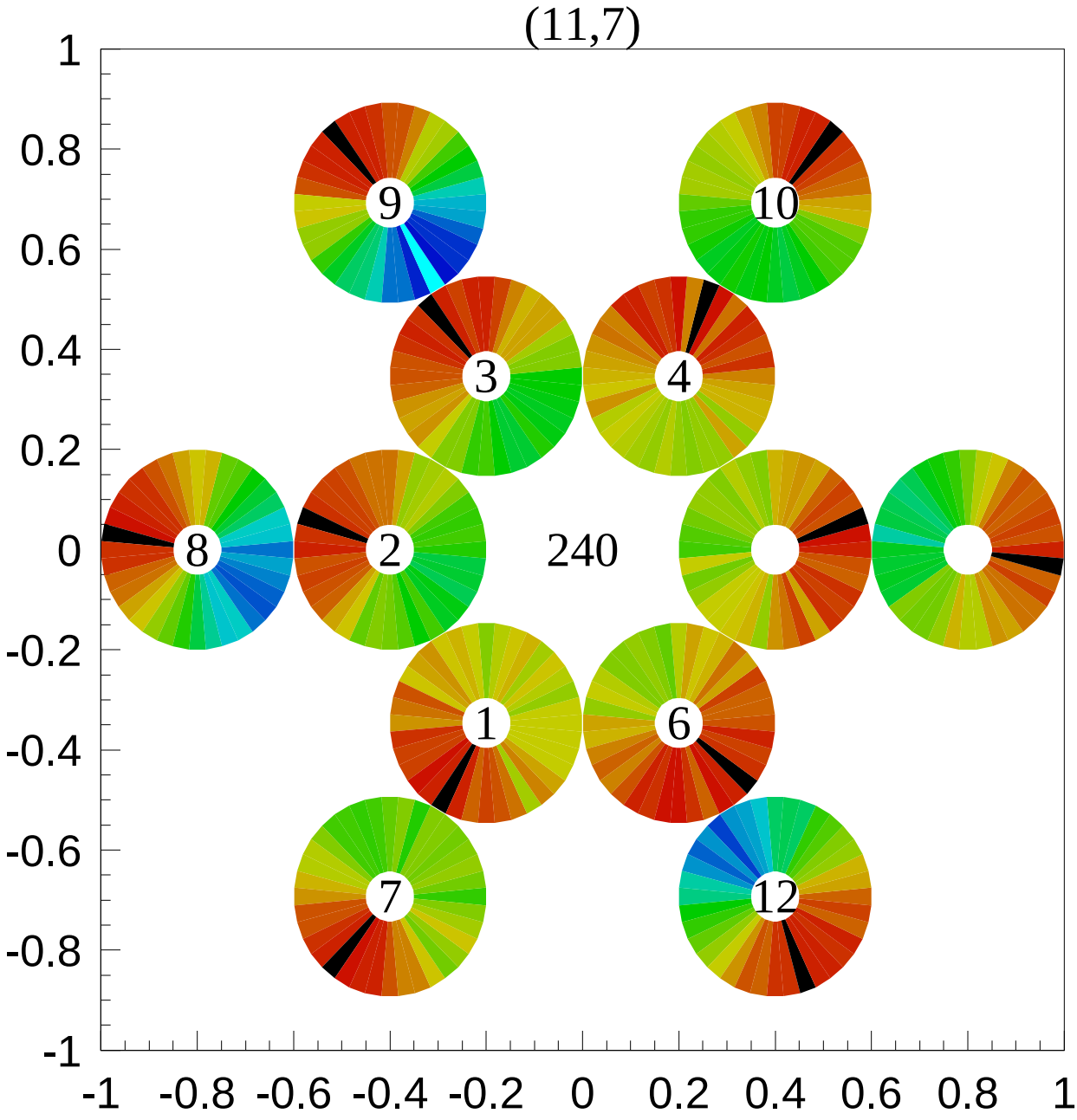

(10,47)
tilted LEDs
average of 6
average of 12
IIh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
IIh
azimuth to LED 7, degrees

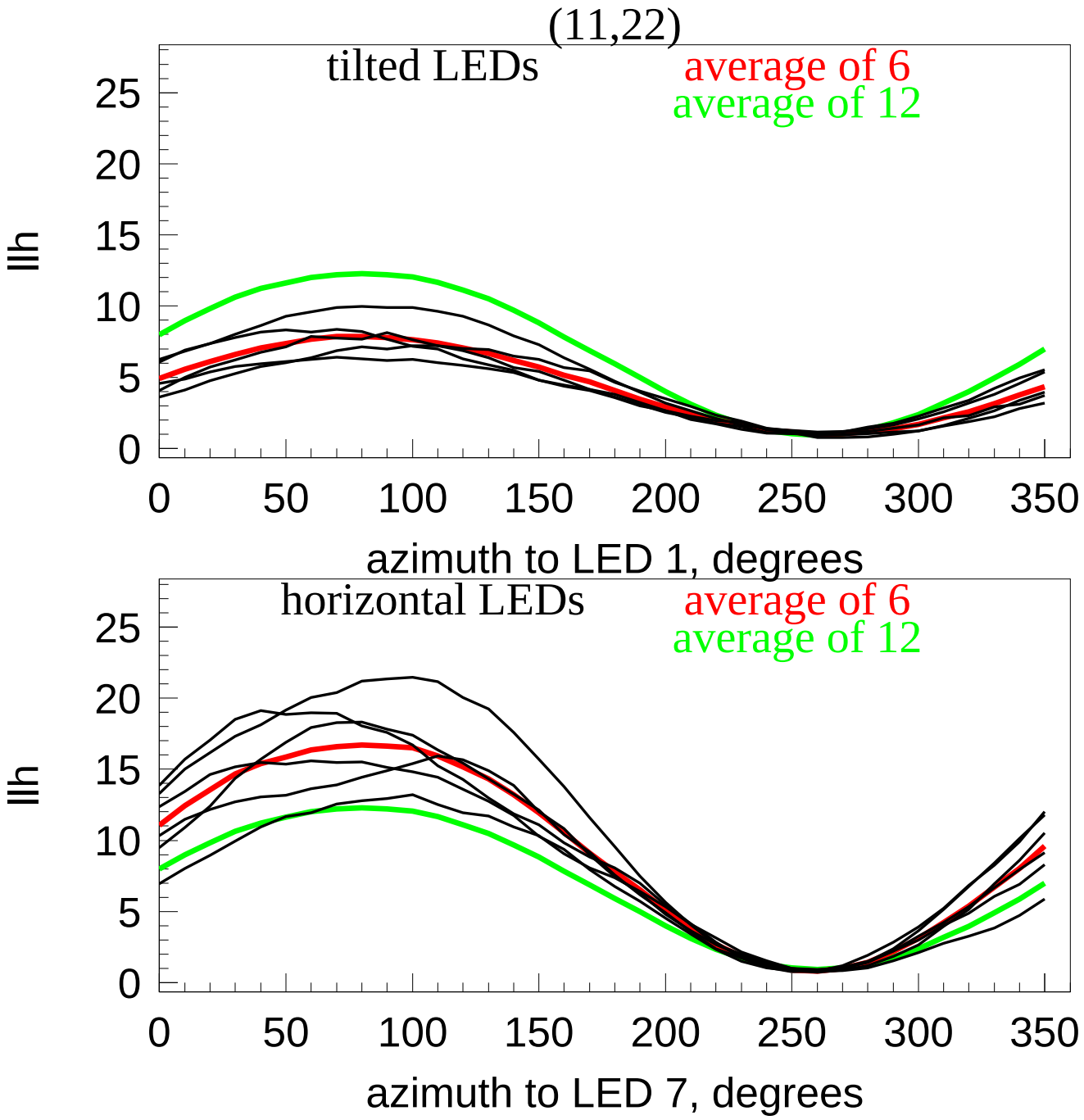

(10,47)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
4
3
260
2
1
12

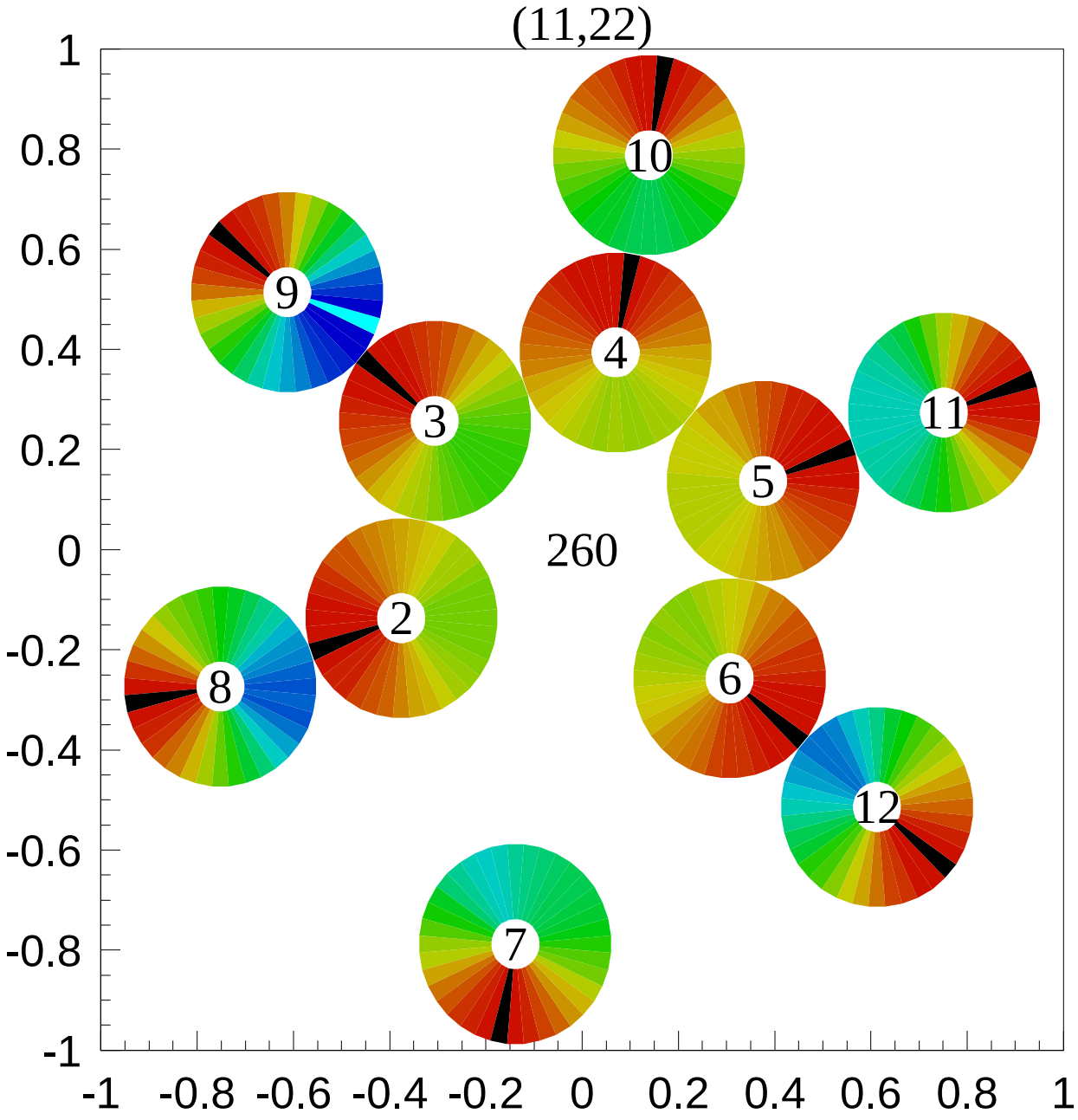

(10,56)
tilted LEDs
average of 6
average of 12
Ilh
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

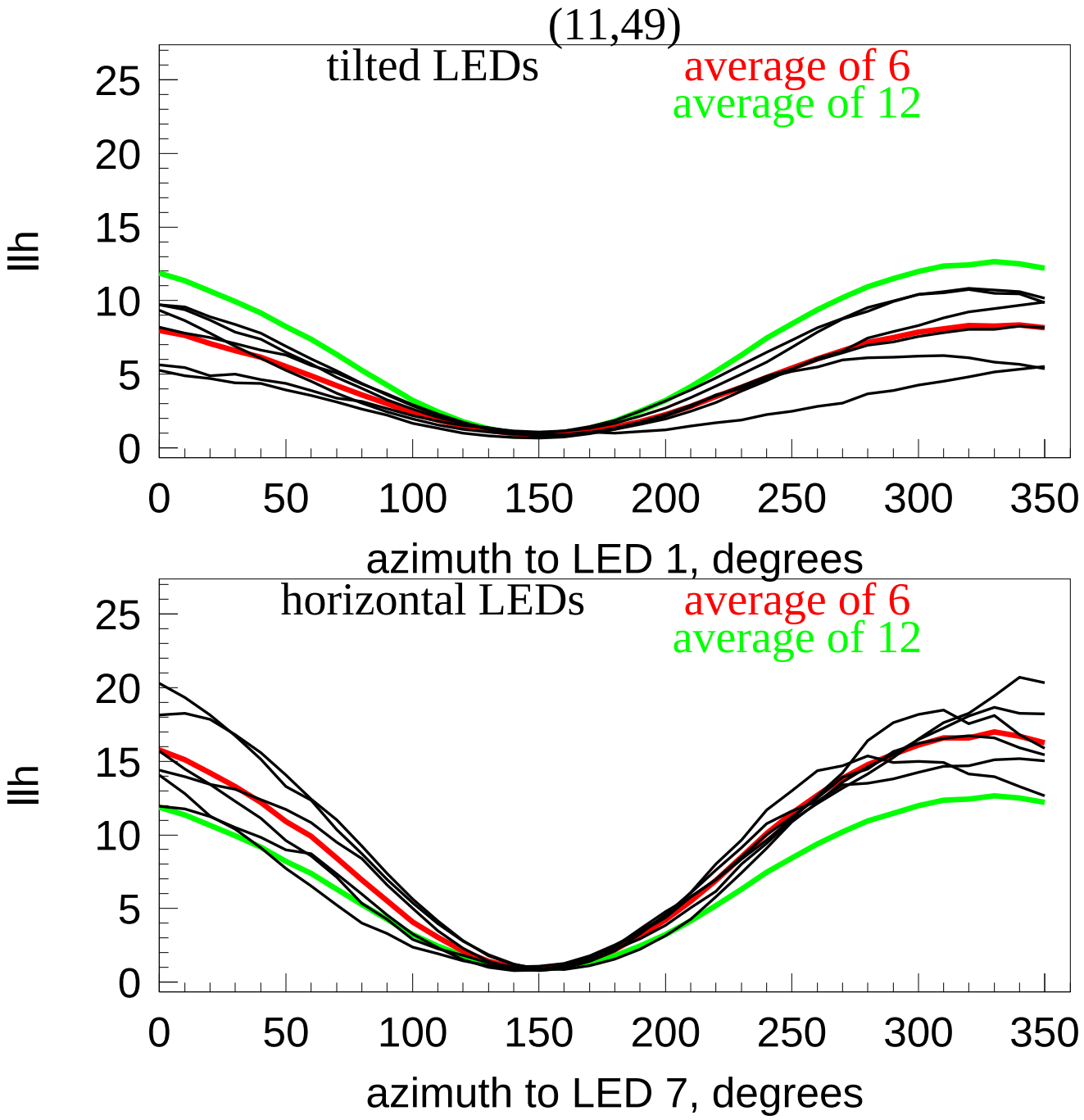

(10,56)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
140
5
11

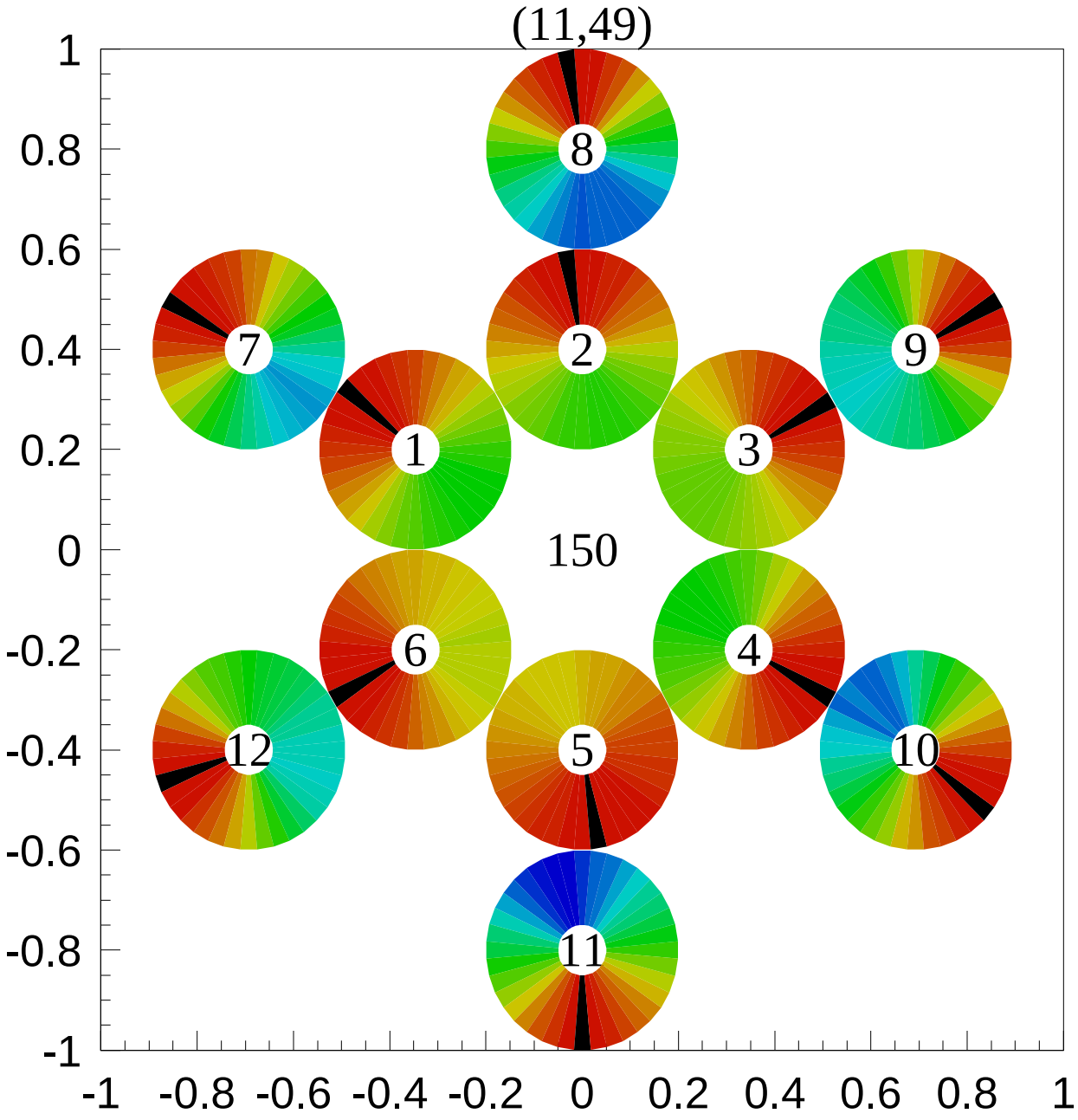

(11,7)
tilted LEDs
average of 6
average of 12
Ilh
3.5
3
2.5
2
1.5
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
3.5
3
2.5
2
1.5
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

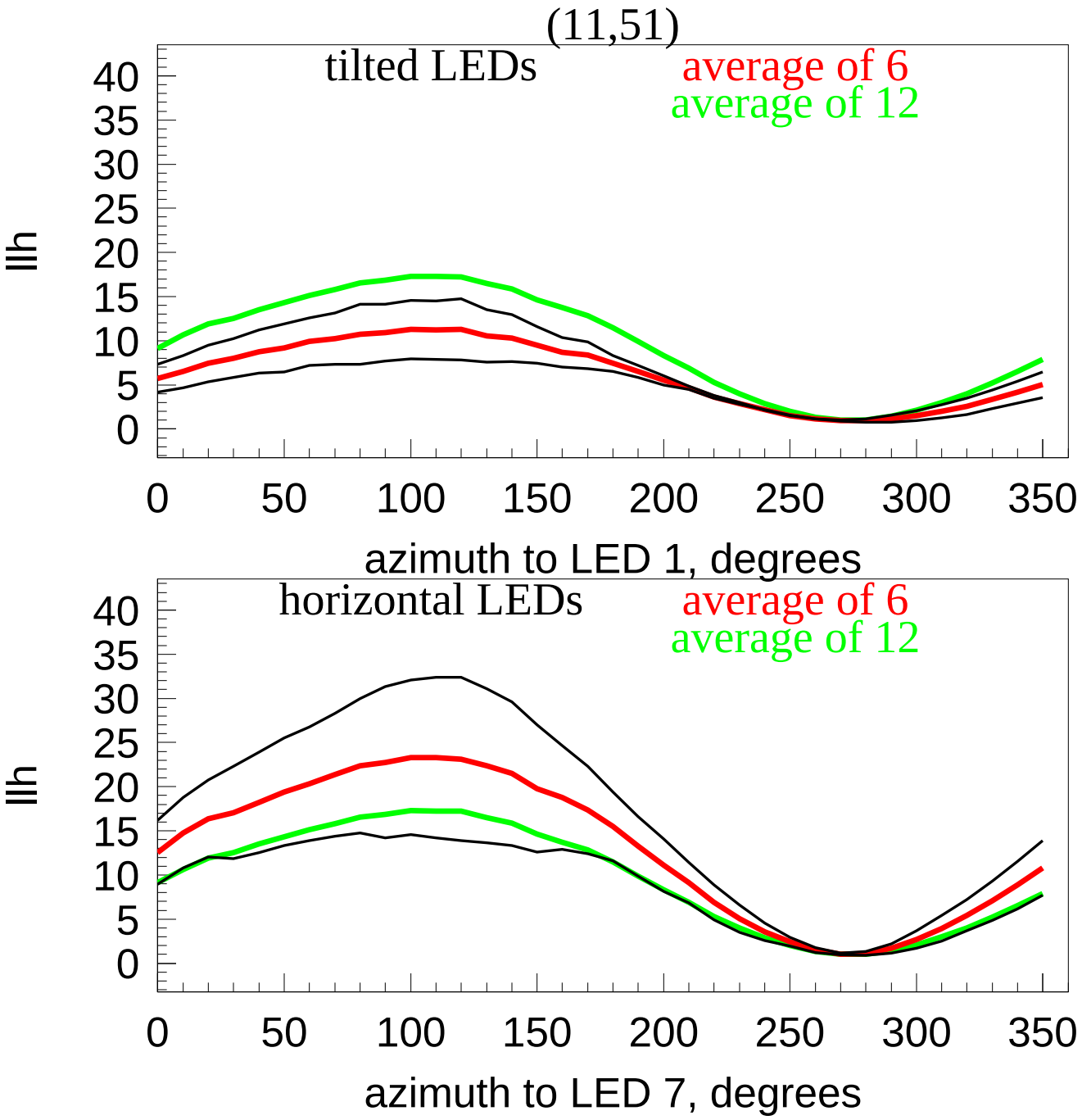

(11,7)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
10
3
4
8
2
240
1
6
7
12

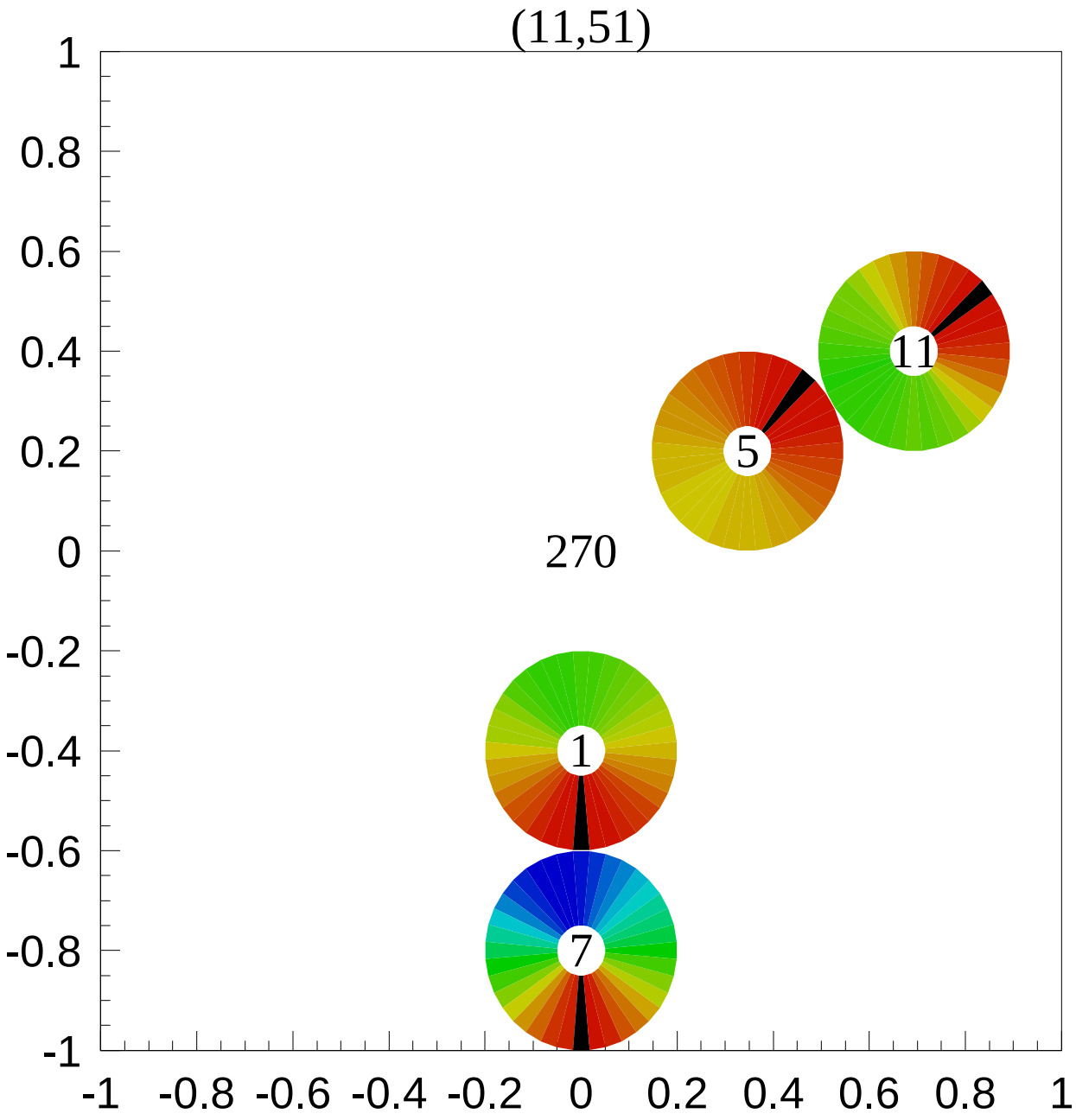

(11,22)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

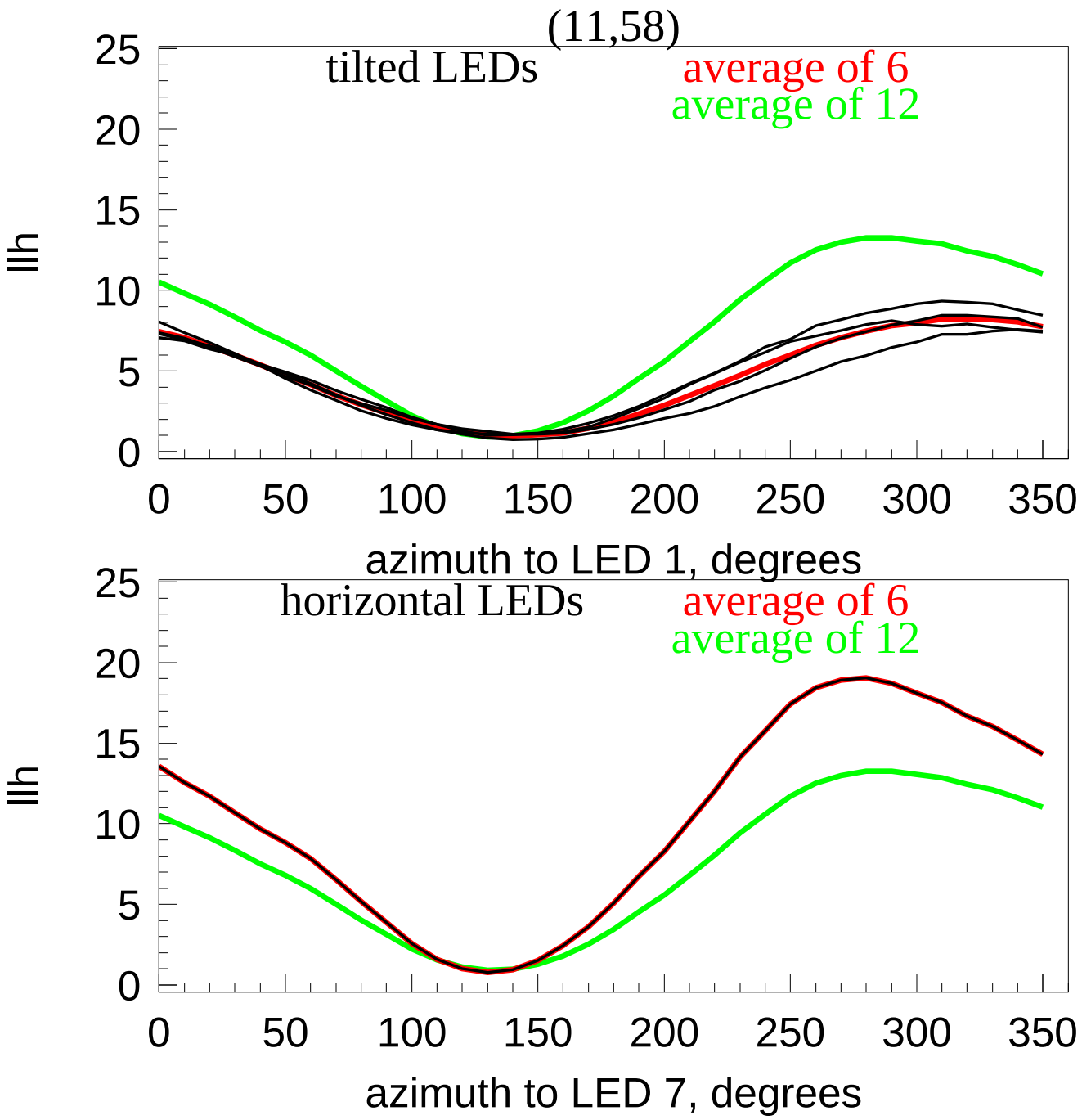

(11,22)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
9
4
3
11
5
260
2
8
6
12
7

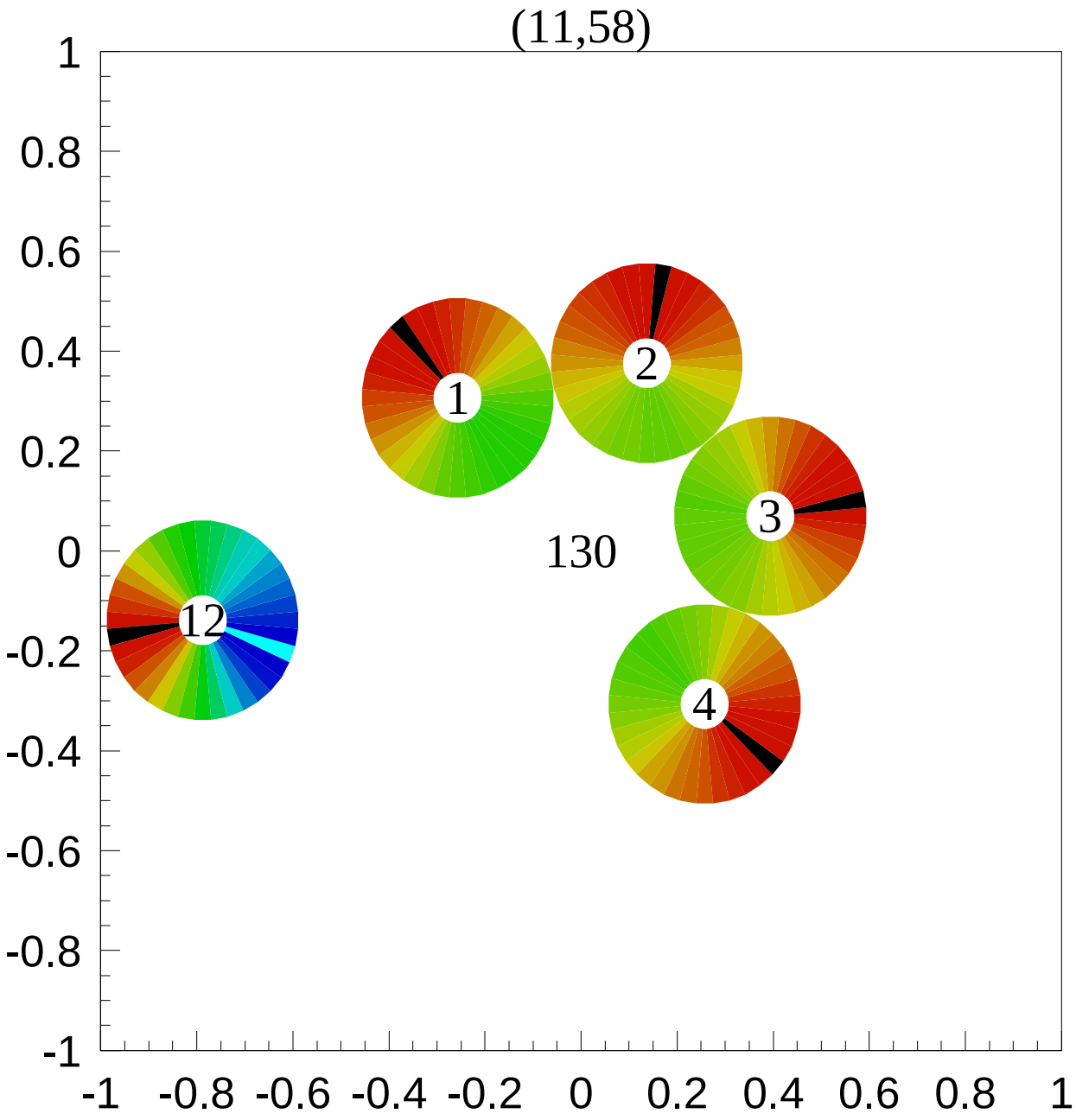

(11,49)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

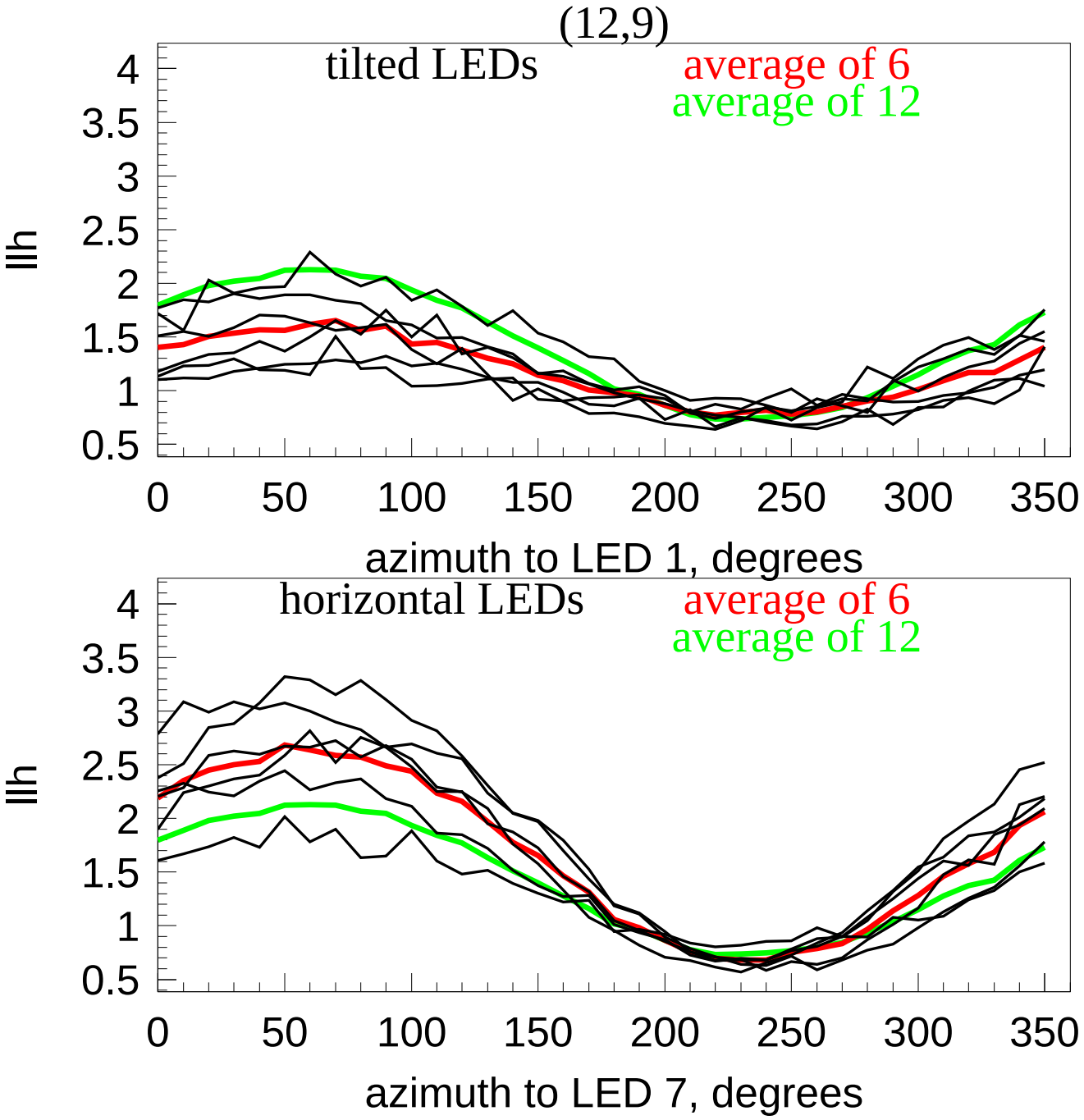

(11,49)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
7
2
9
1
3
150
6
4
12
5
10
11

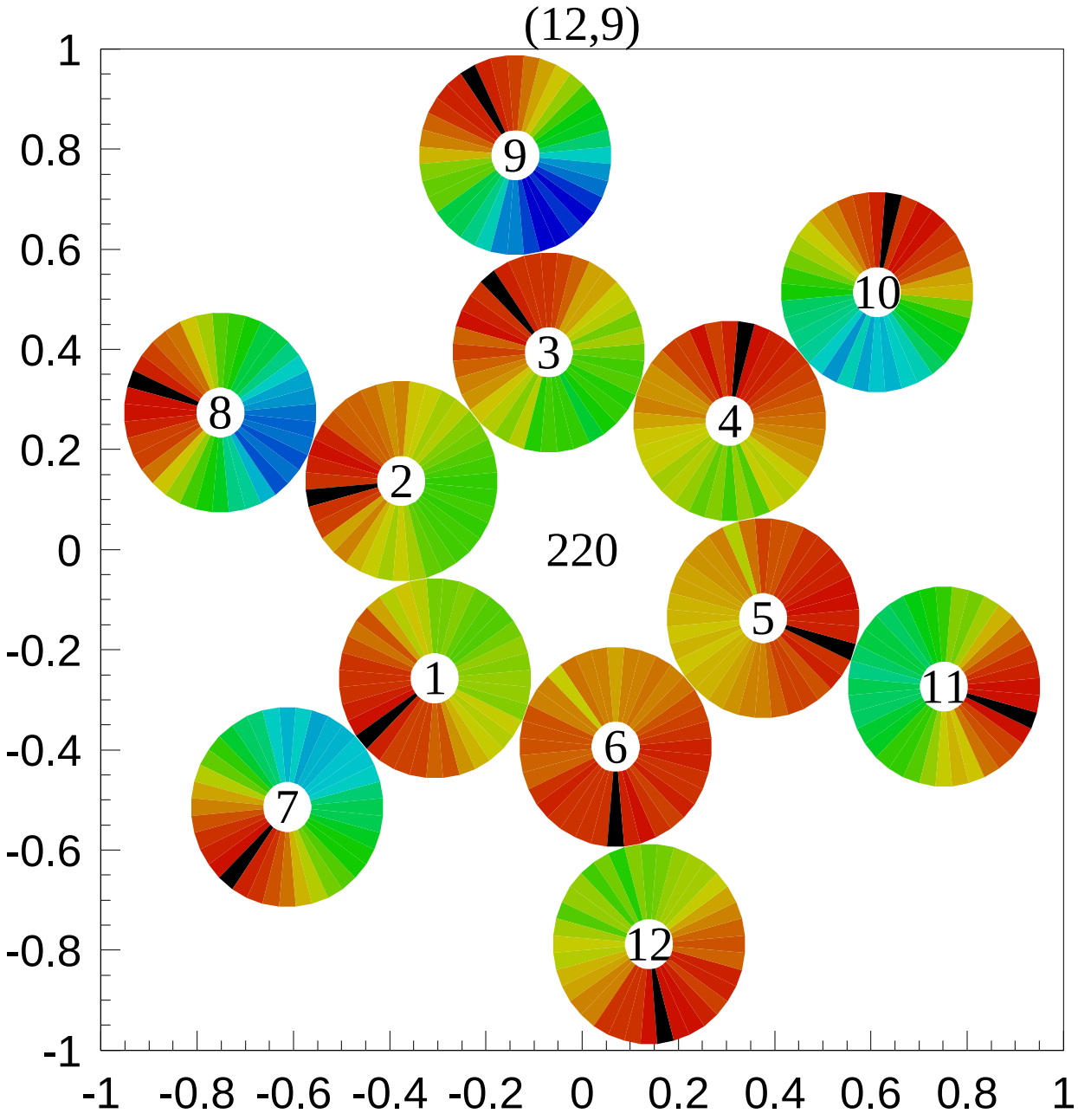

(11,51)
tilted LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

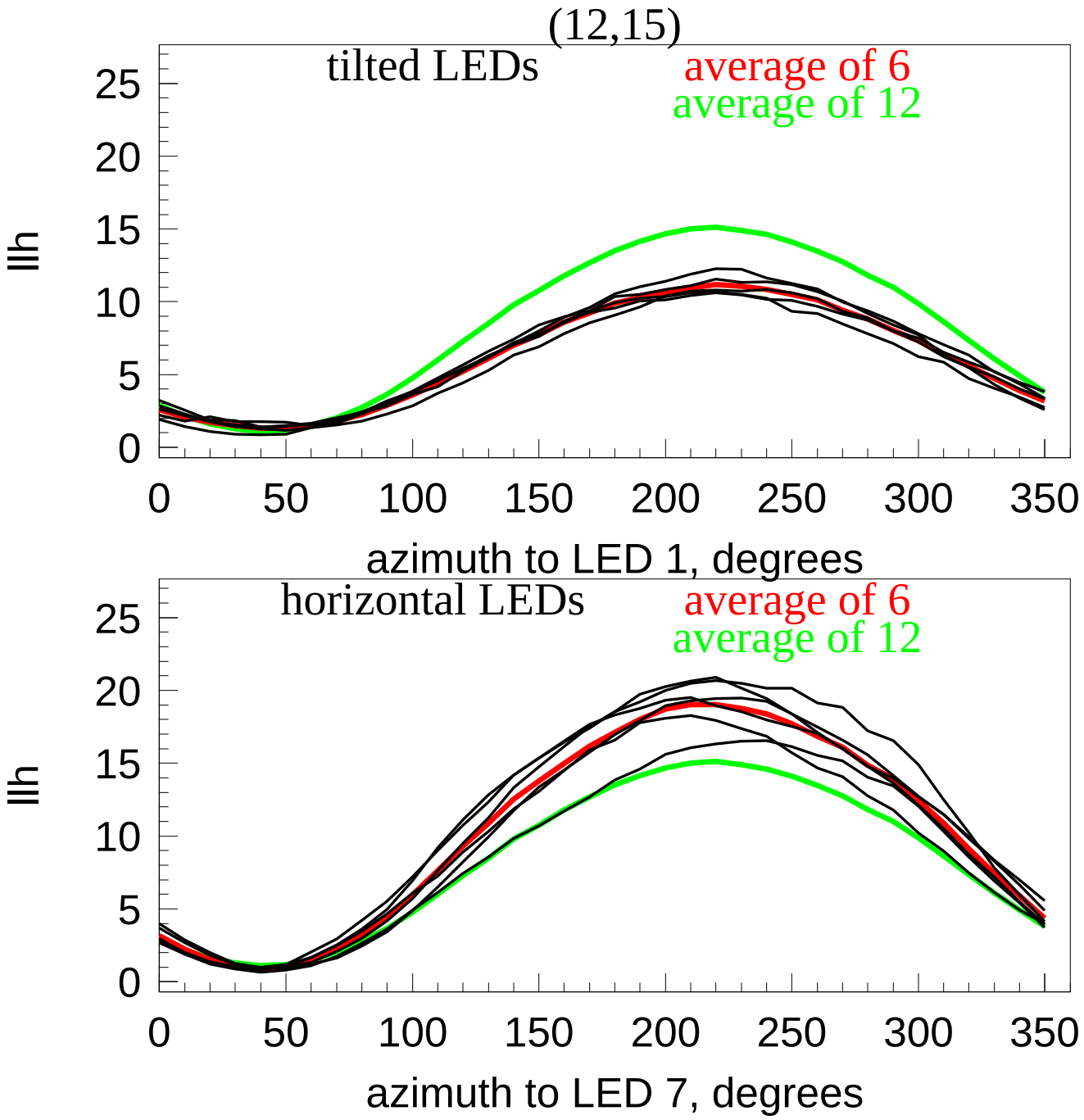

(11,51)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
270
1
7

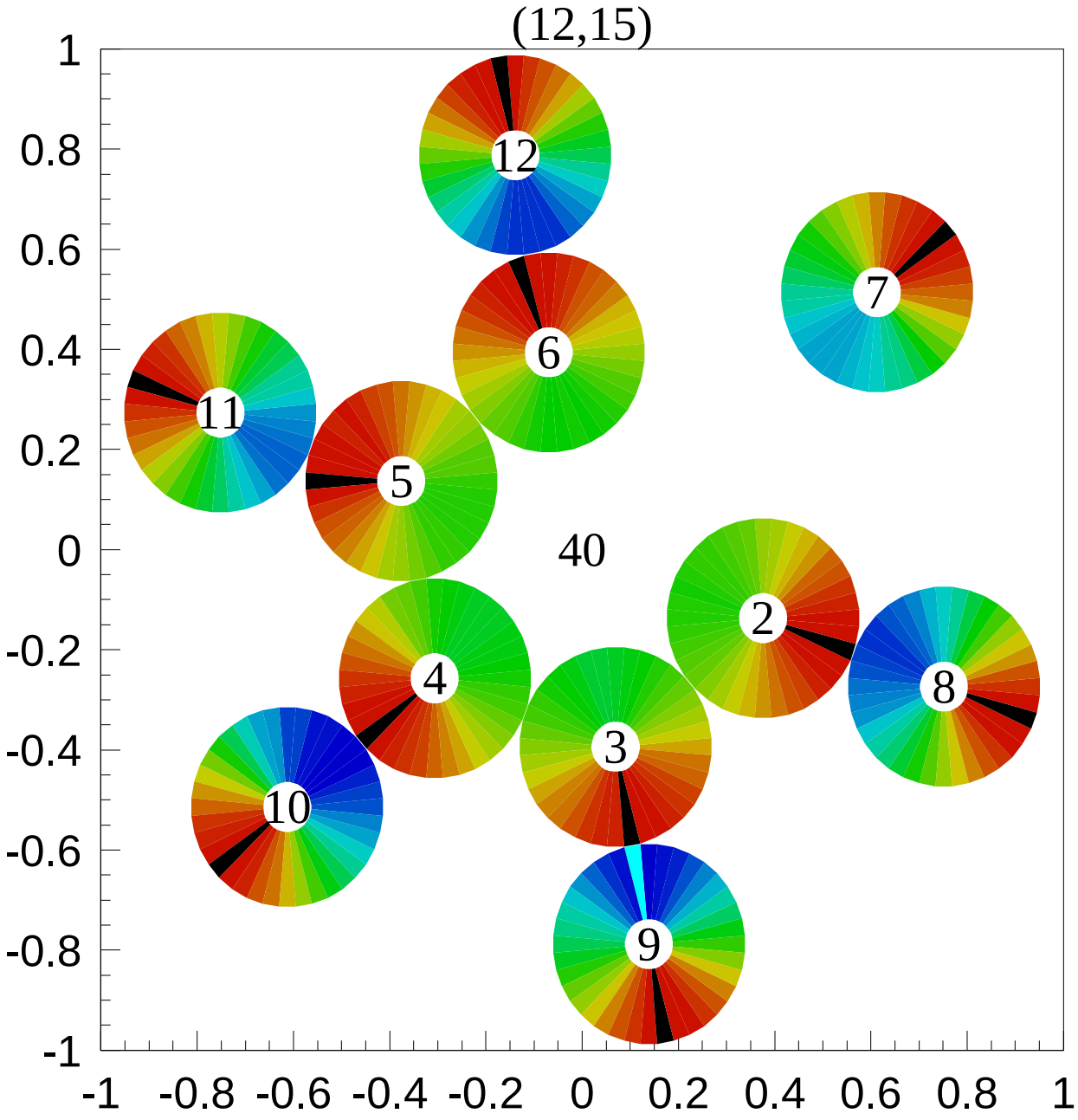

(11,58)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

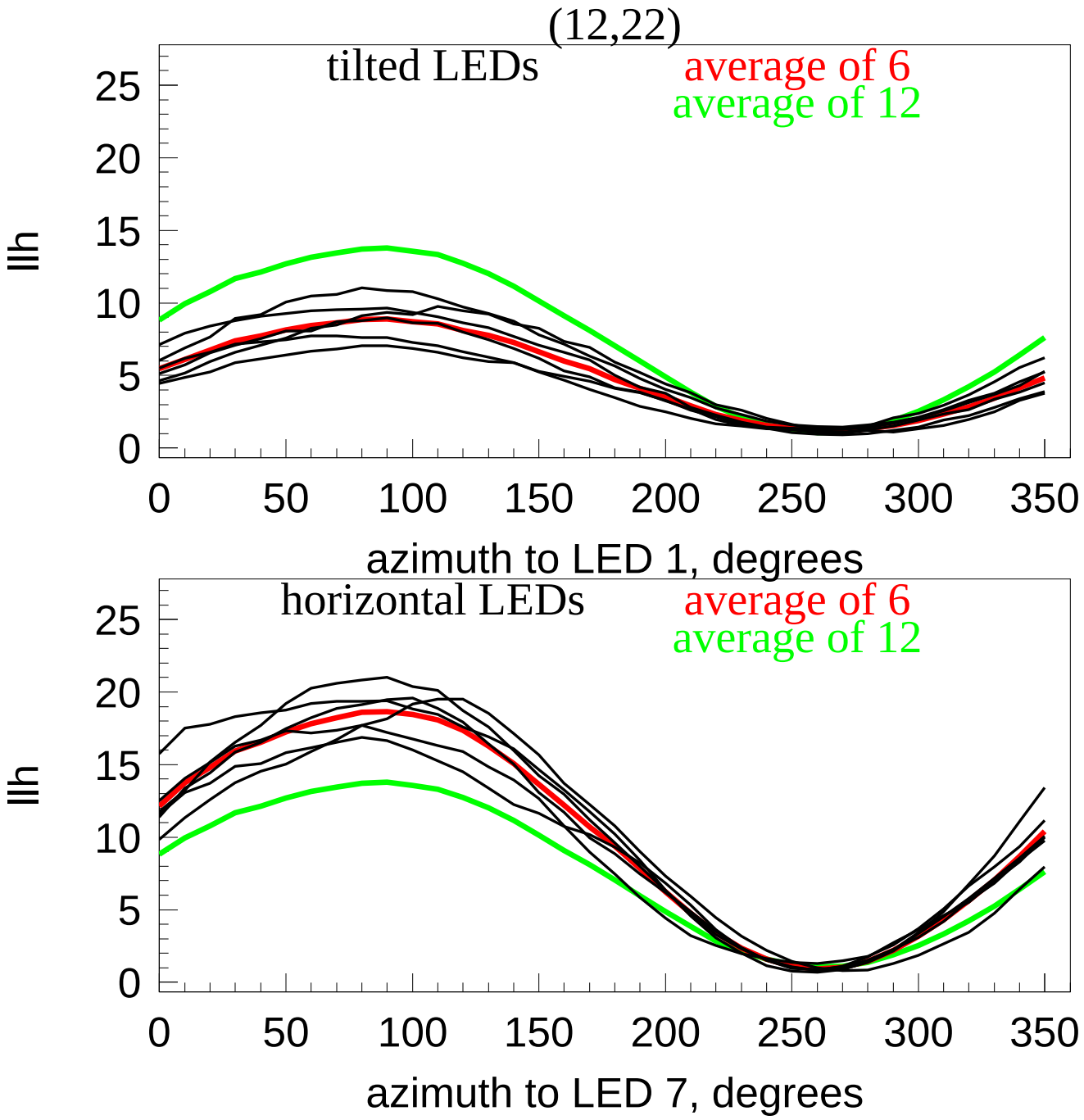

(11,58)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
1
2
3
4
12
130

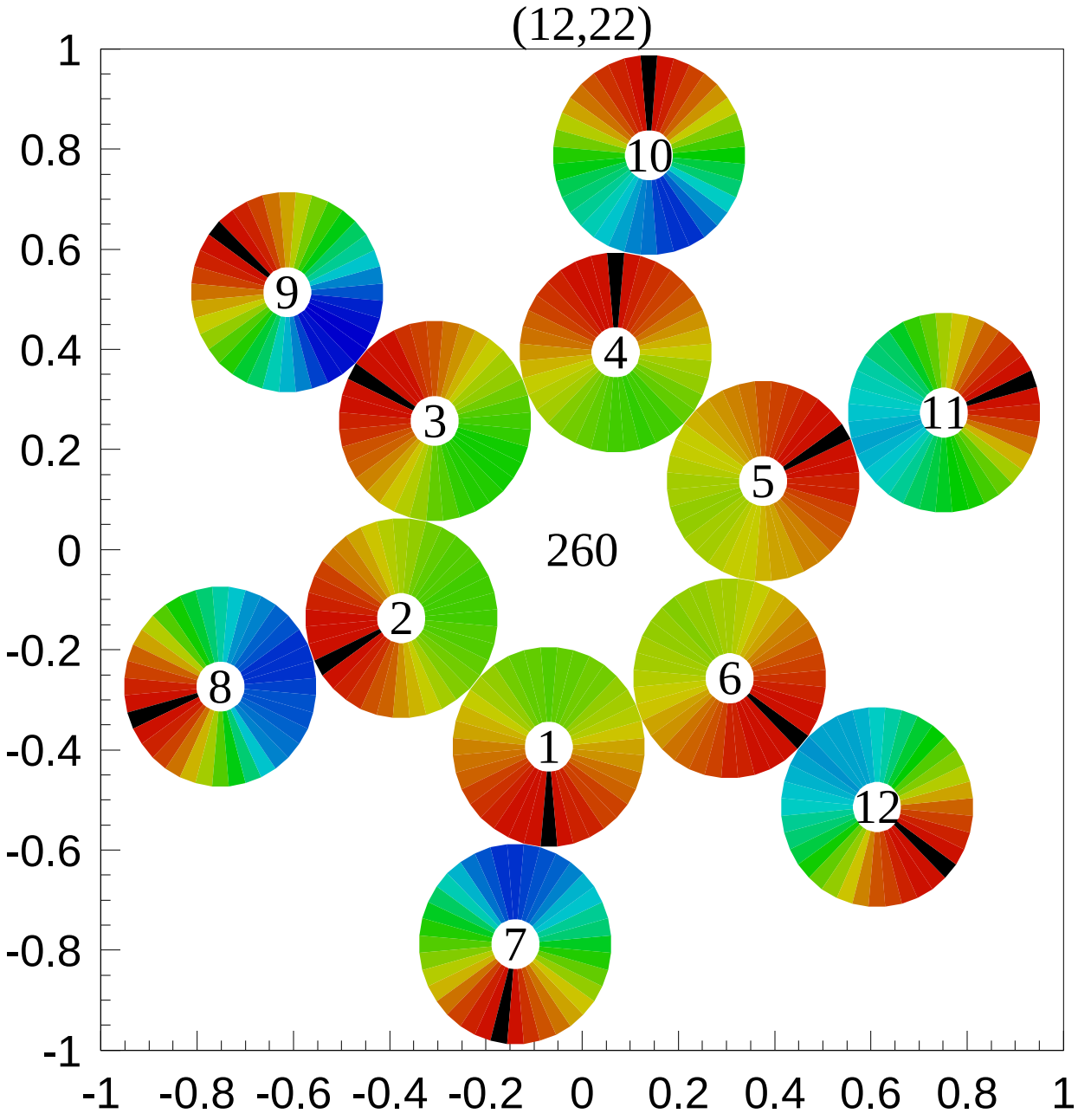

(12,9)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

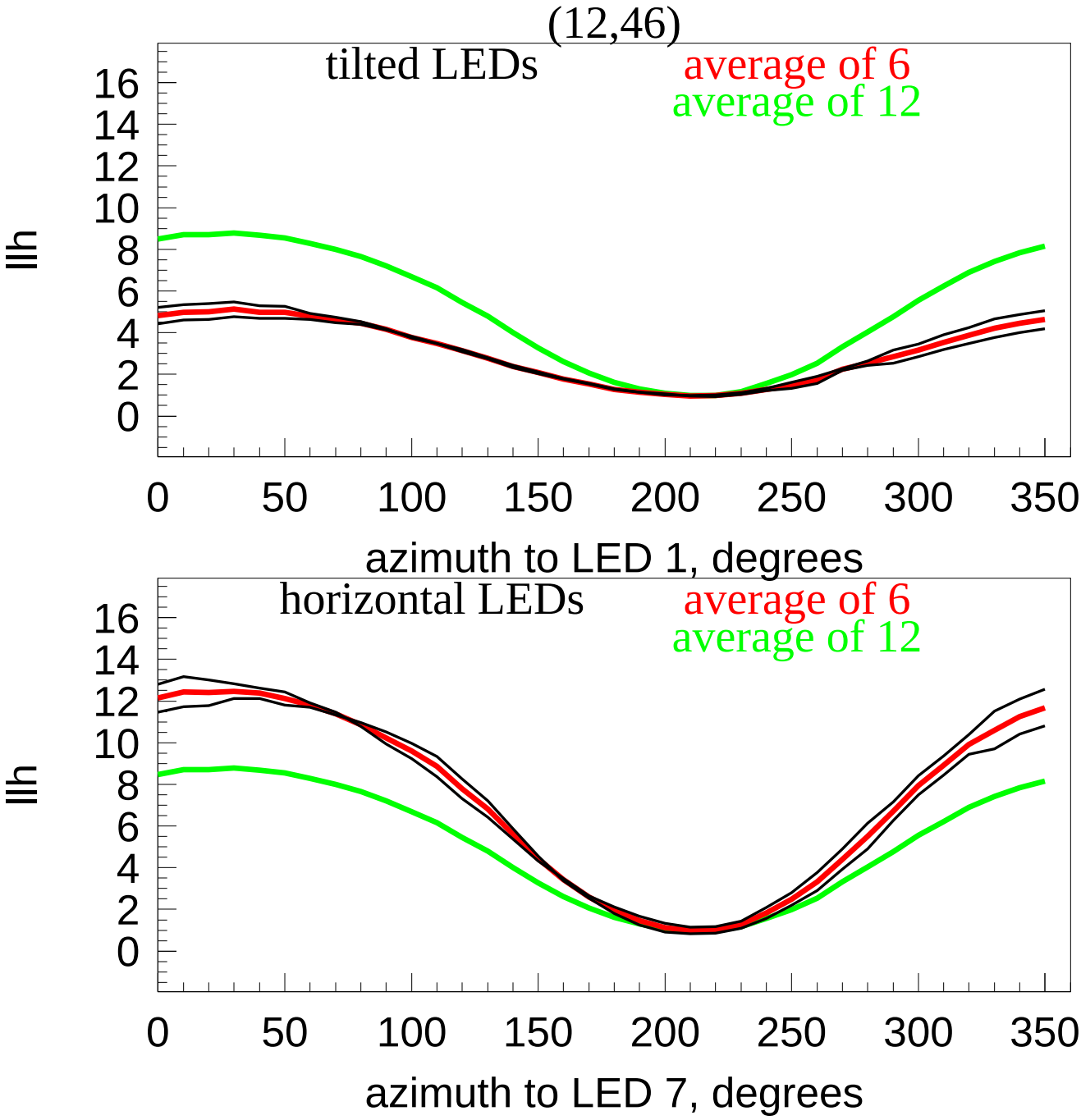

(12,9)
220
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

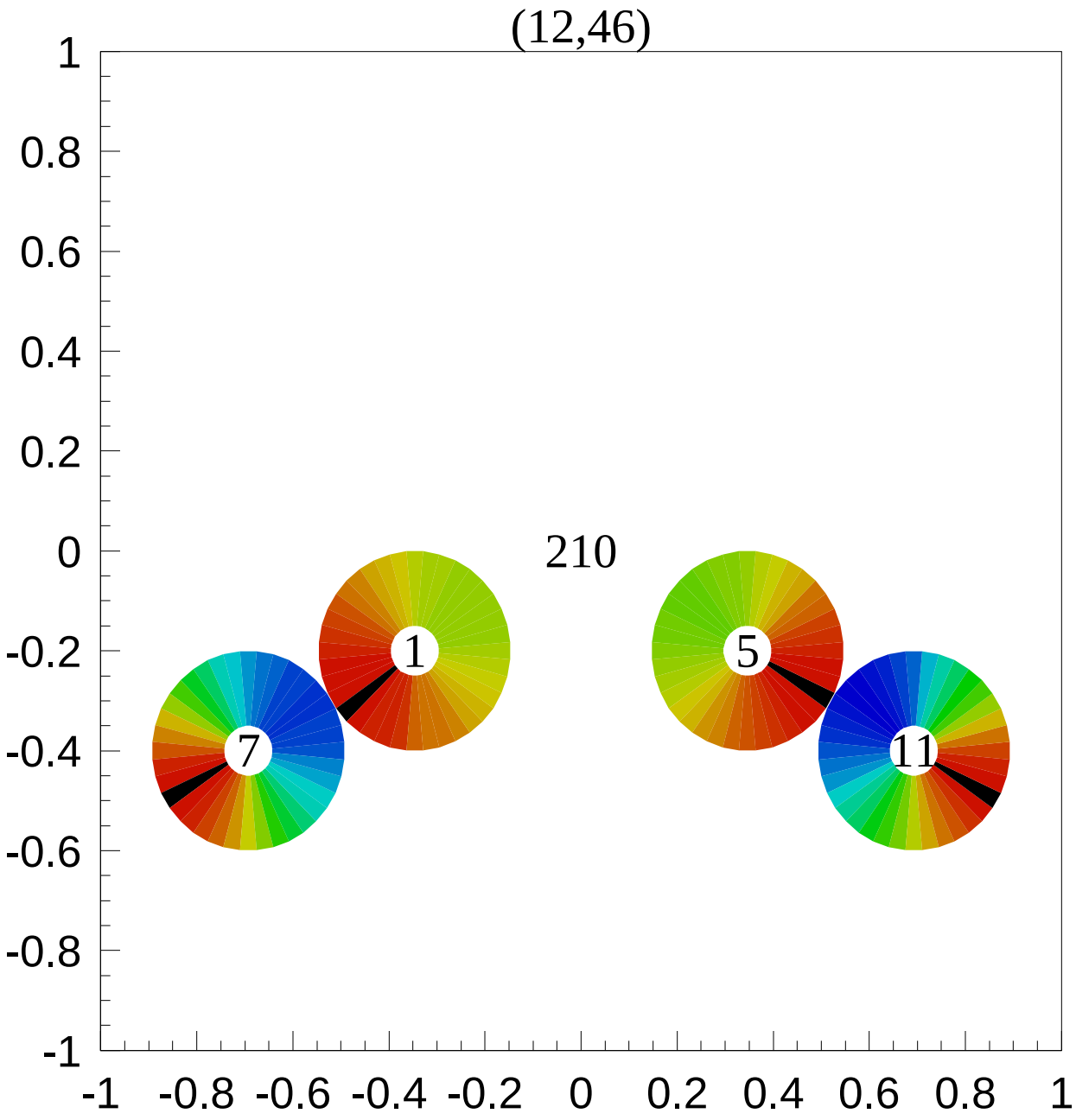

(12,15)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

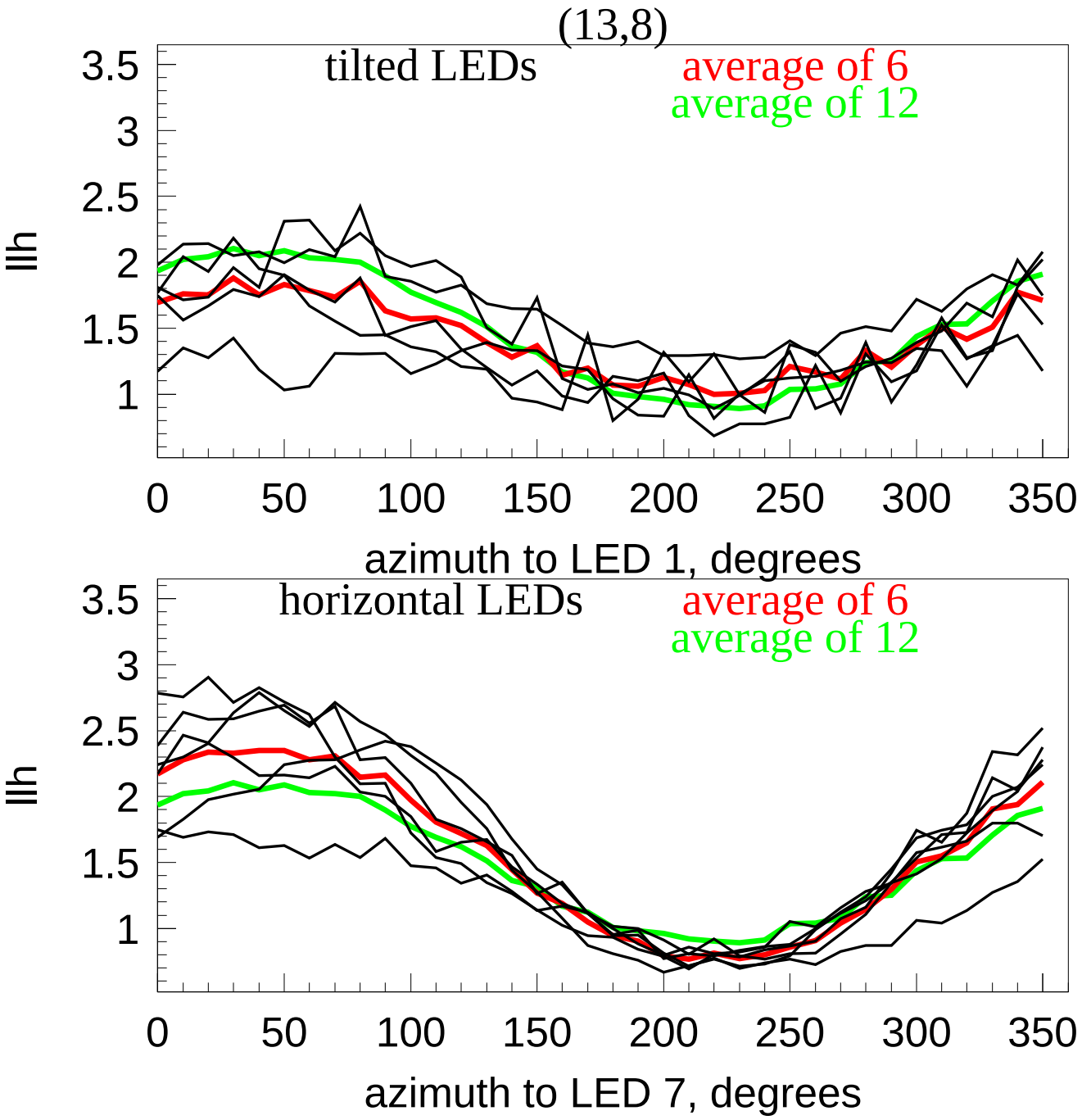

(12,15)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
7
6
11
5
40
2
8
4
3
10
9

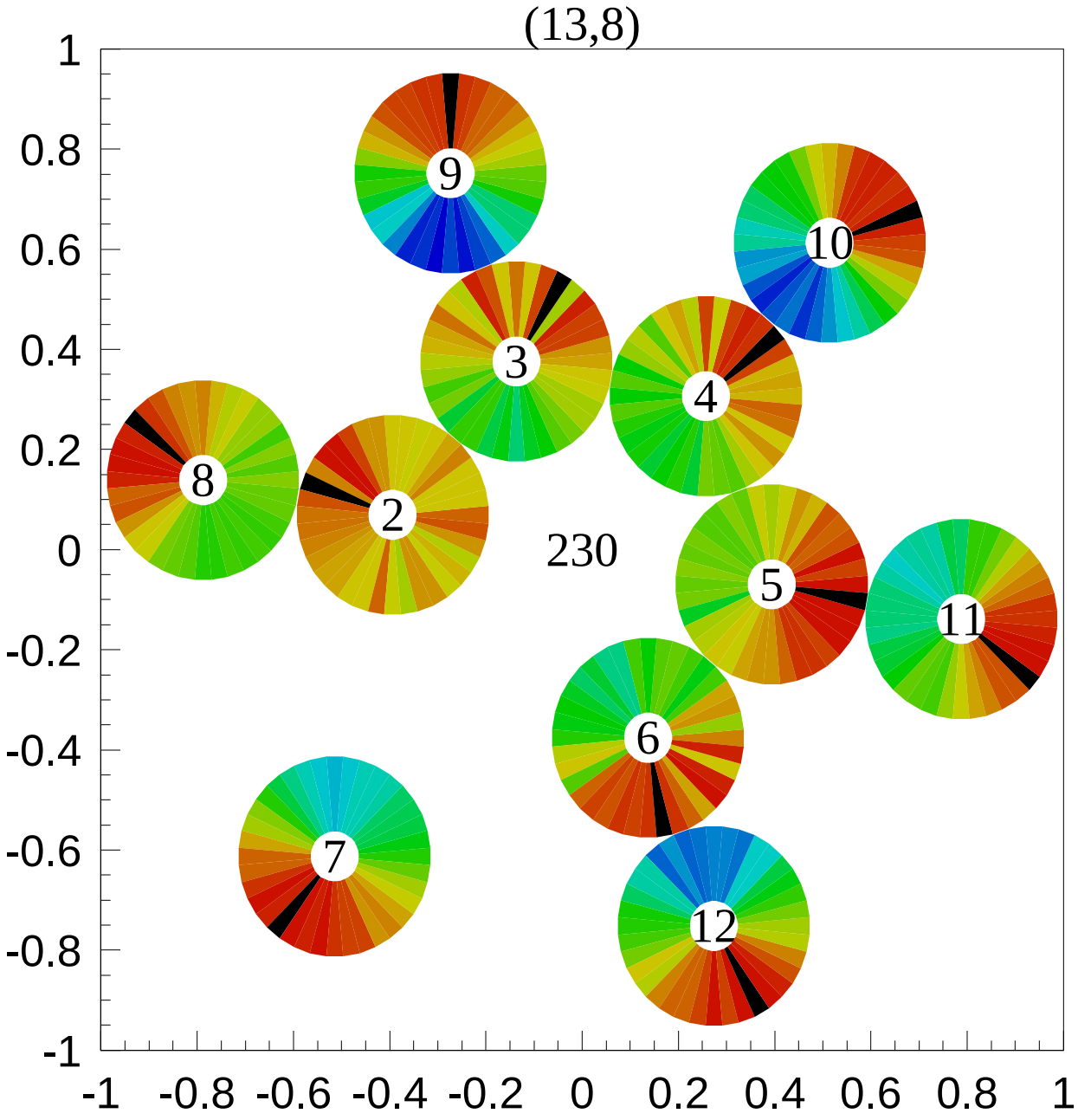

(12,22)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

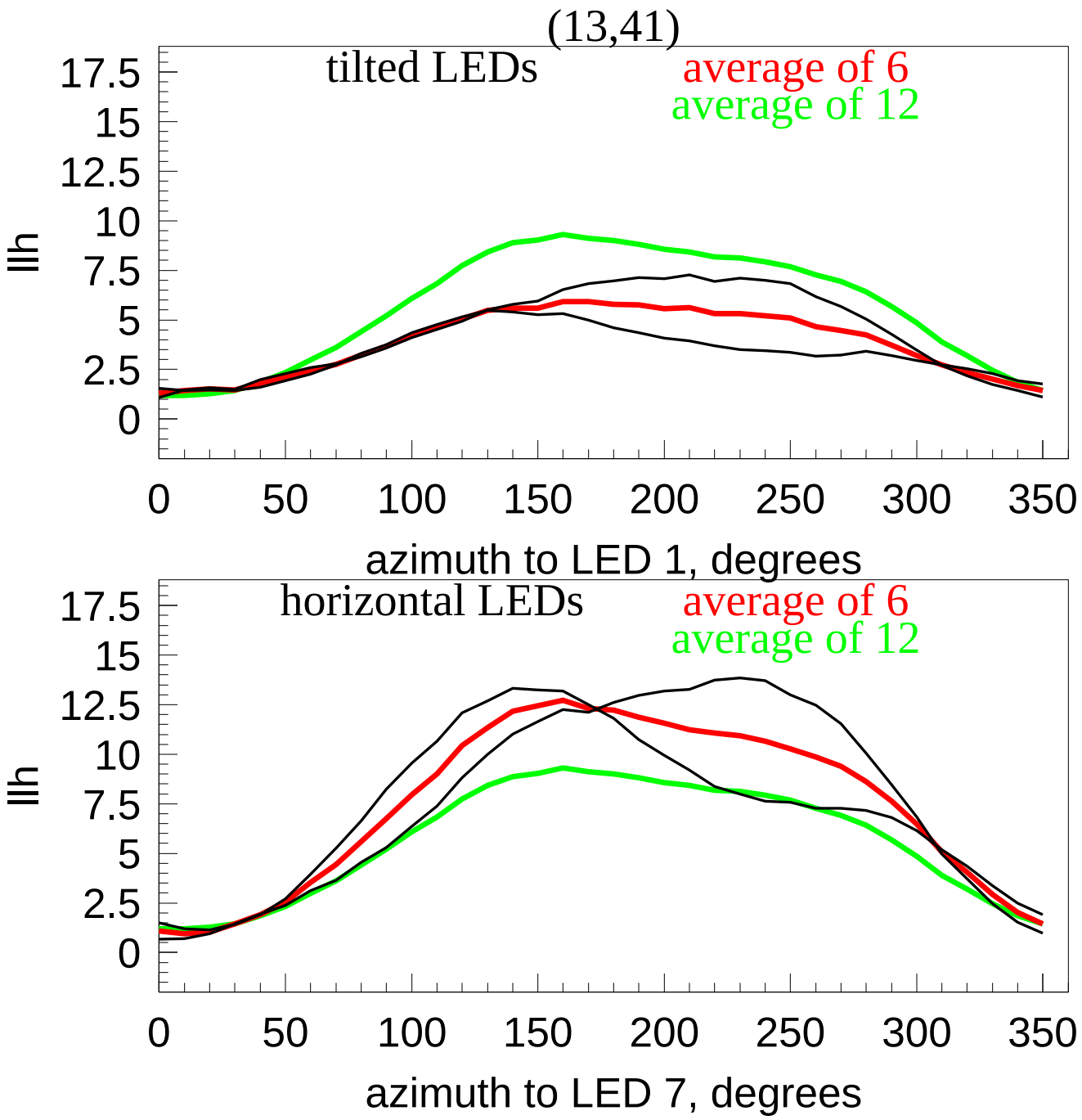

(12,22)
260
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

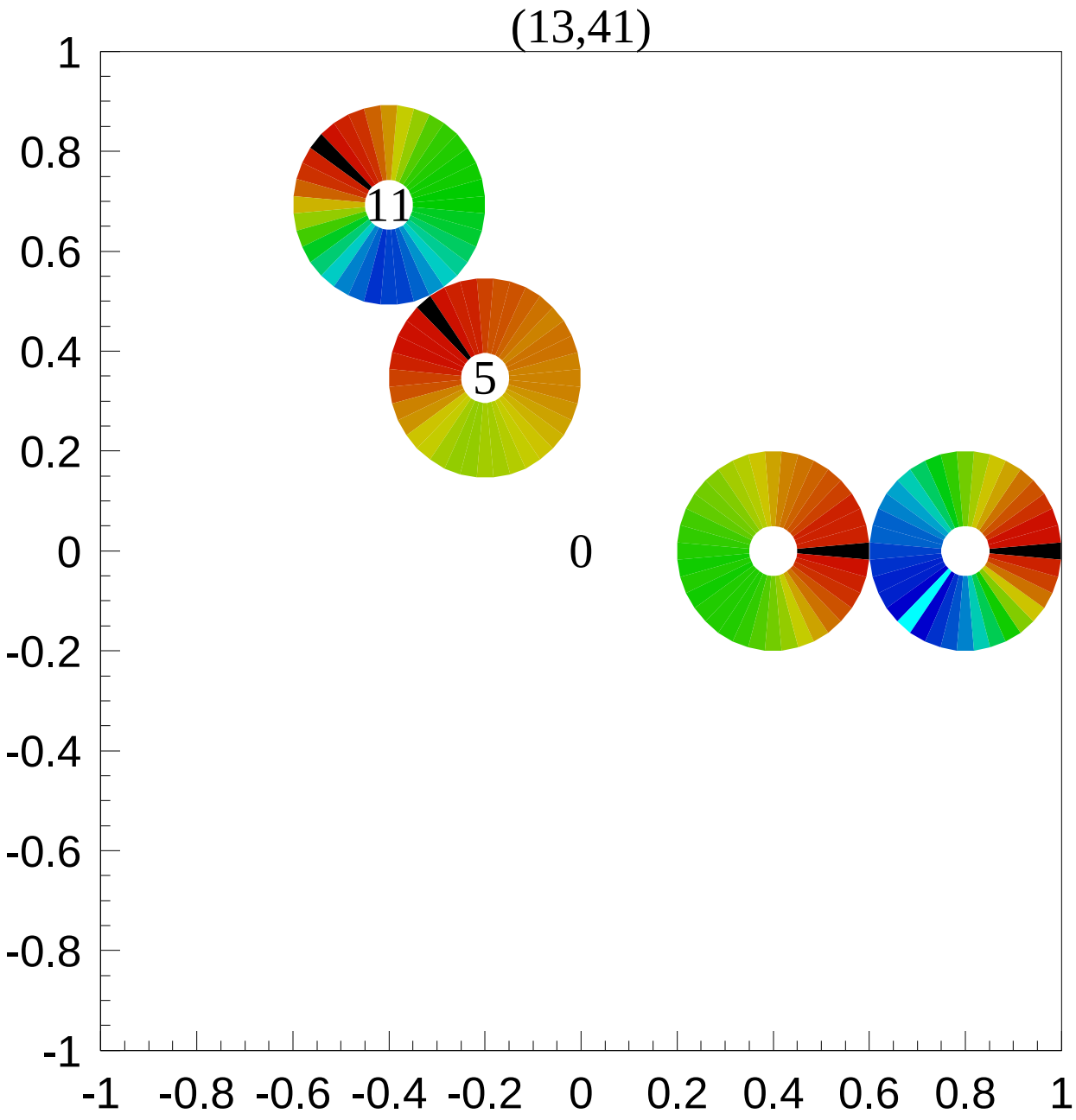

(12,46)
tilted LEDs
average of 6
average of 12
Ilh
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

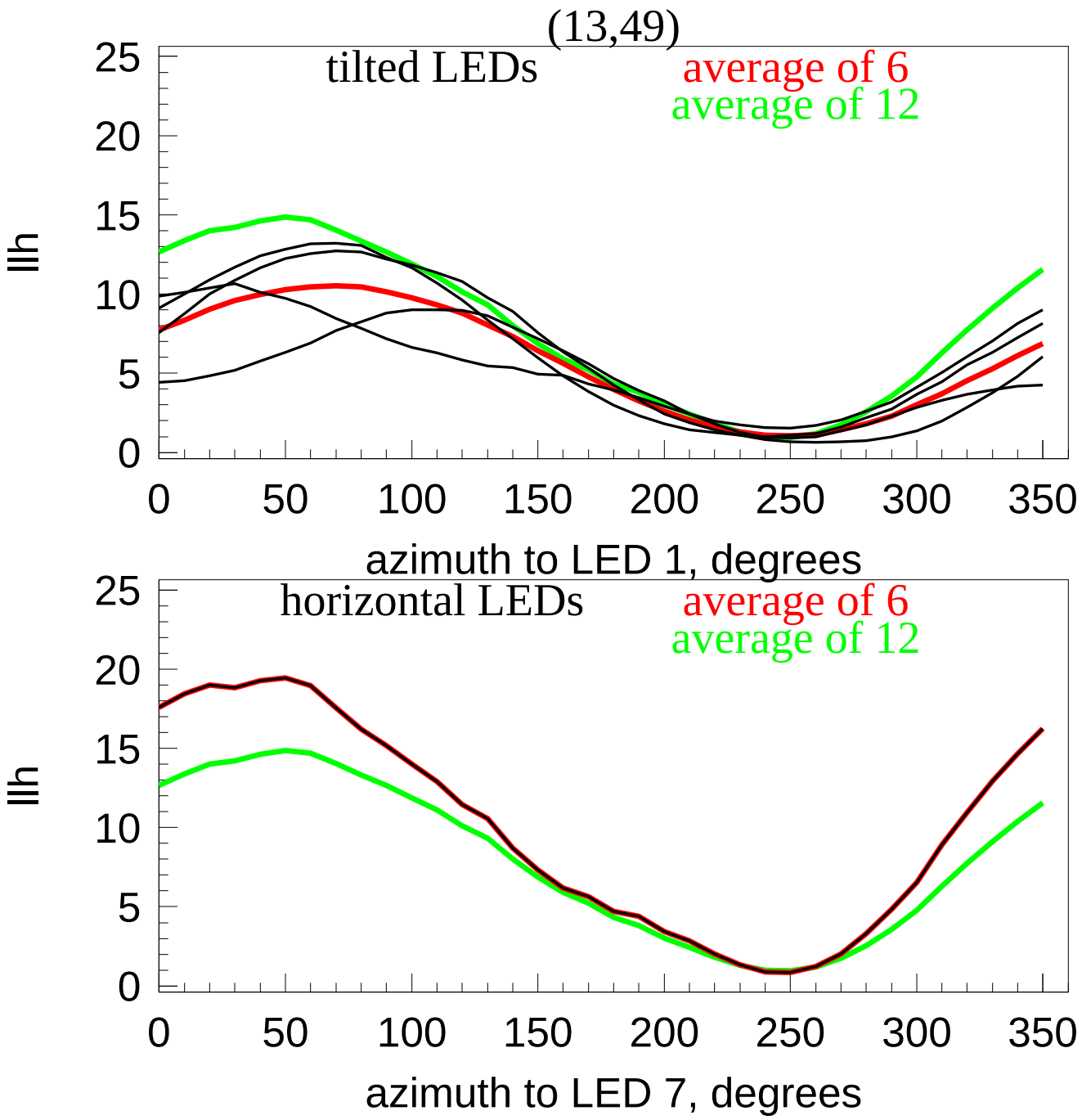

(12,46)
210
1
5
7
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

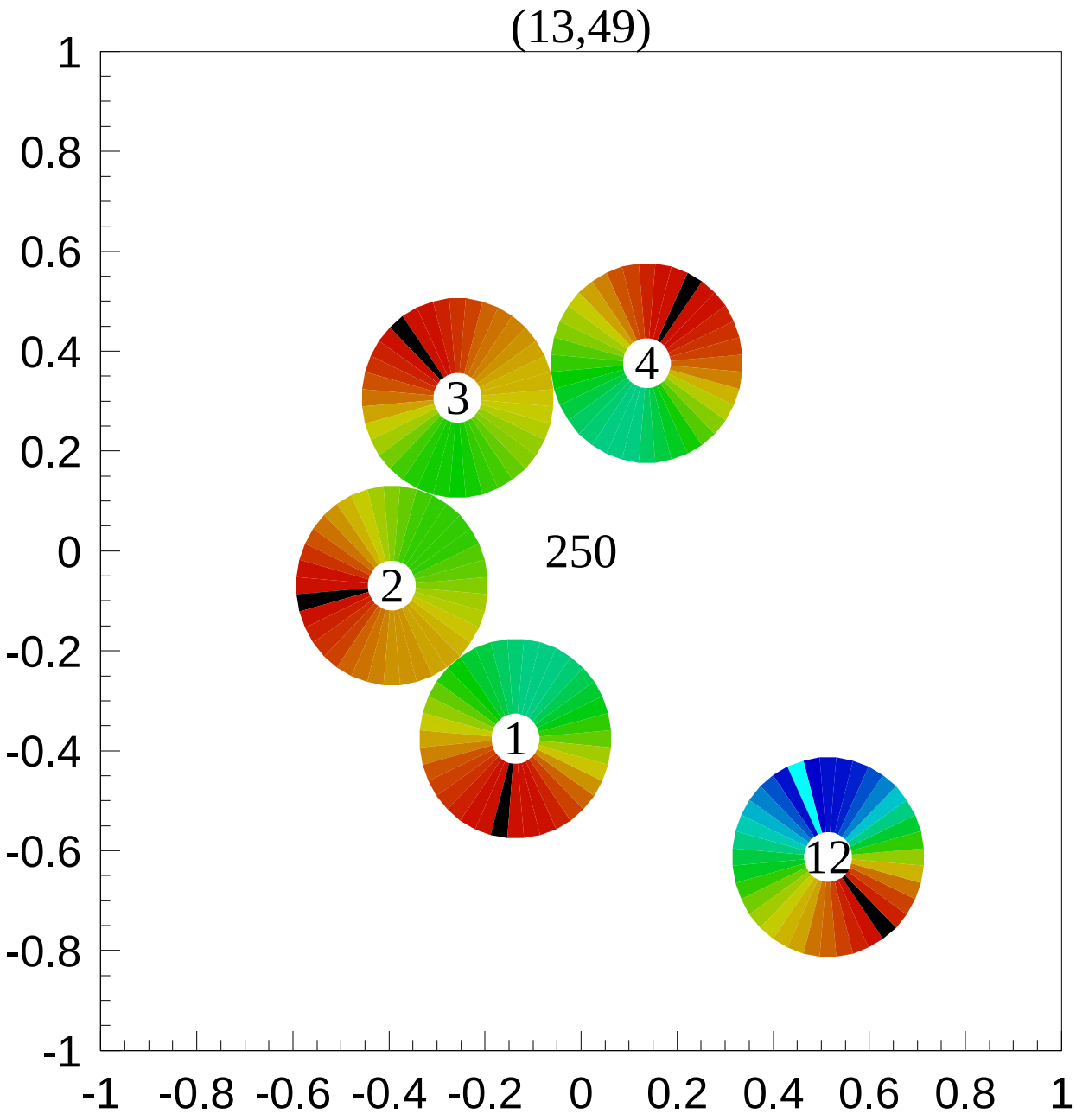

(13,8)
tilted LEDs
average of 6
average of 12
IIh
3.5
3
2.5
2
1.5
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
IIh
3.5
3
2.5
2
1.5
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

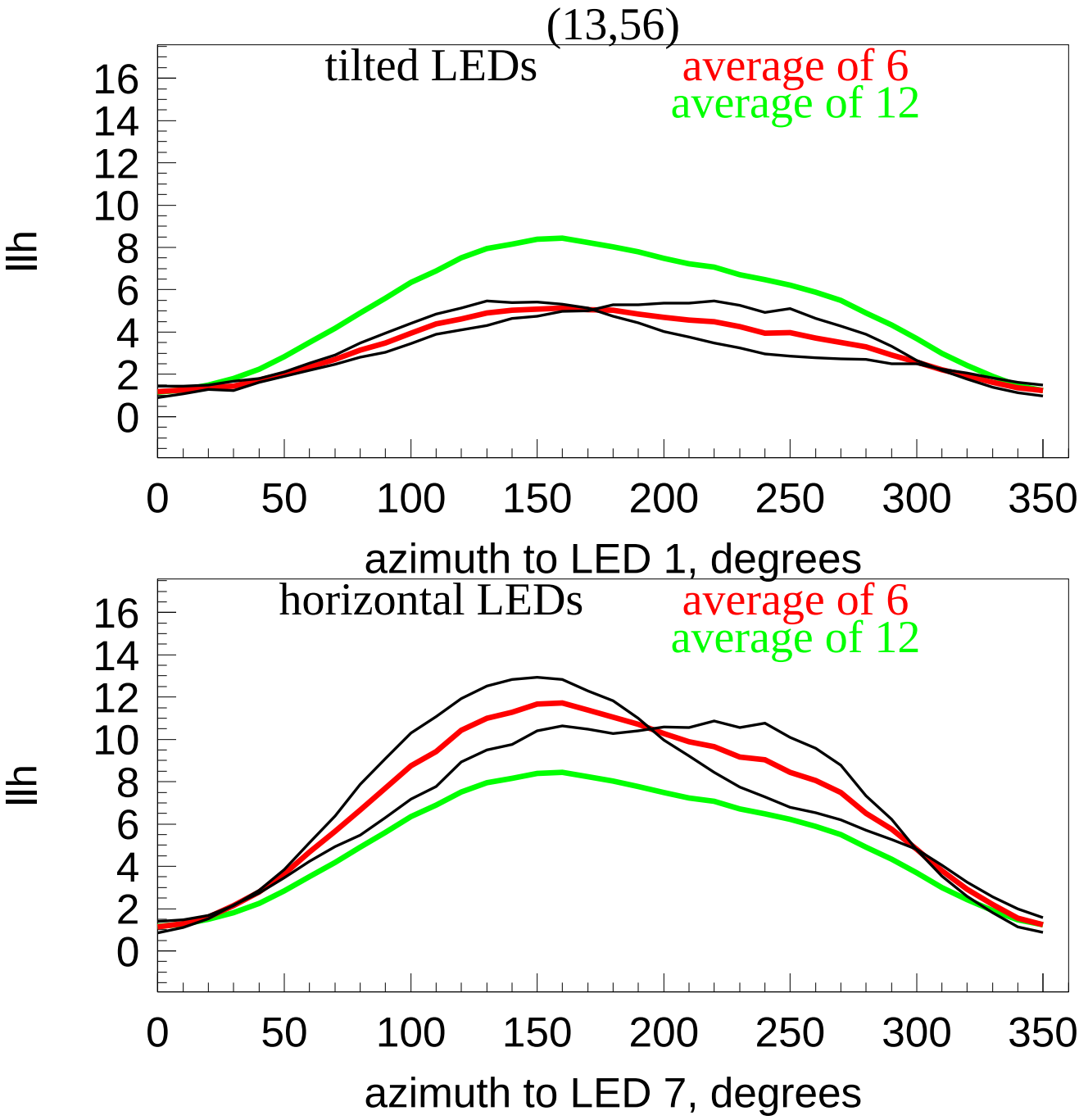

(13,8)
230
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
10
3
4
8
2
5
11
6
7
12

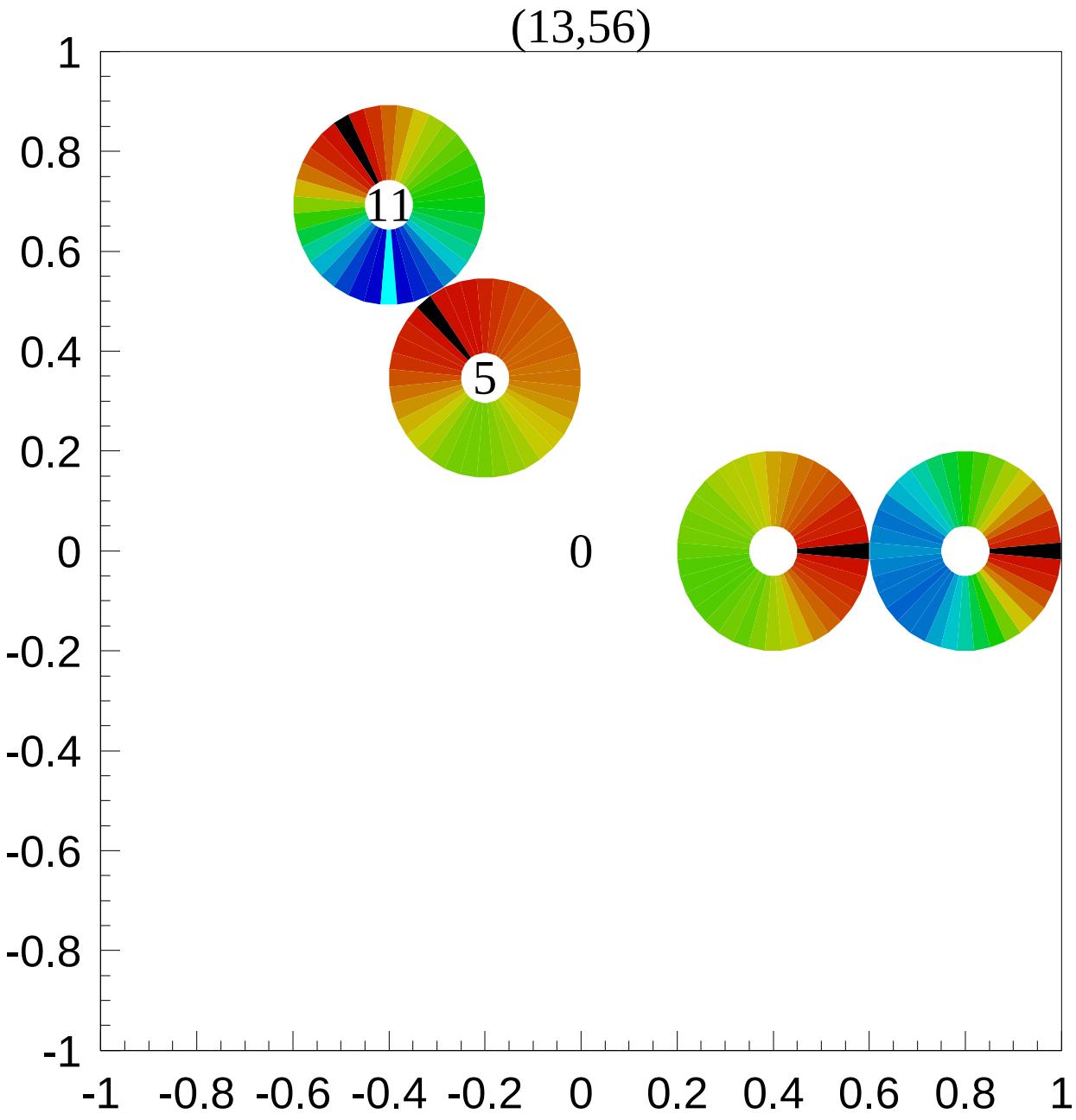

(13,41)
tilted LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
Ilh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
Ilh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

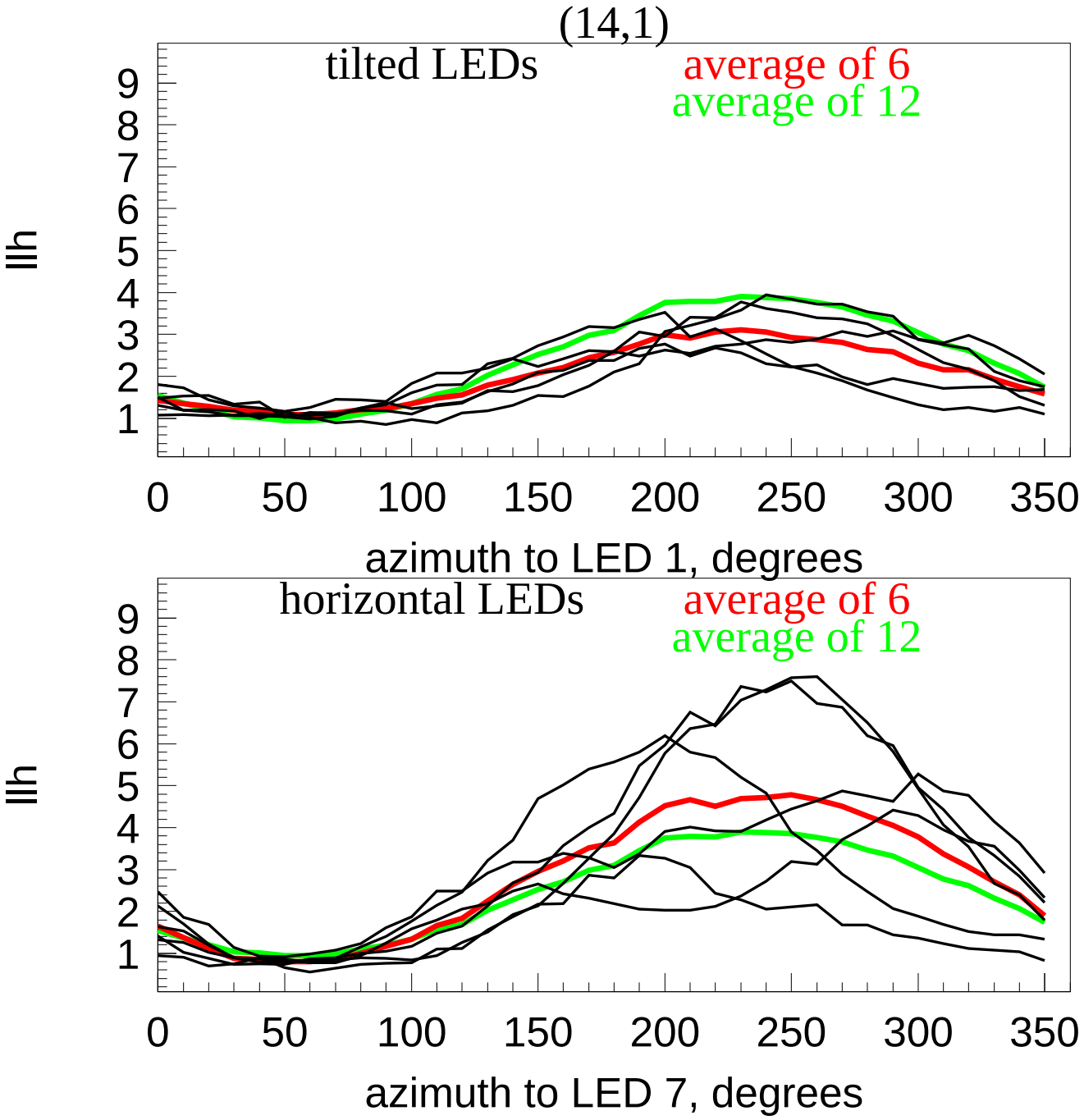

(13,41)
11
5
0
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

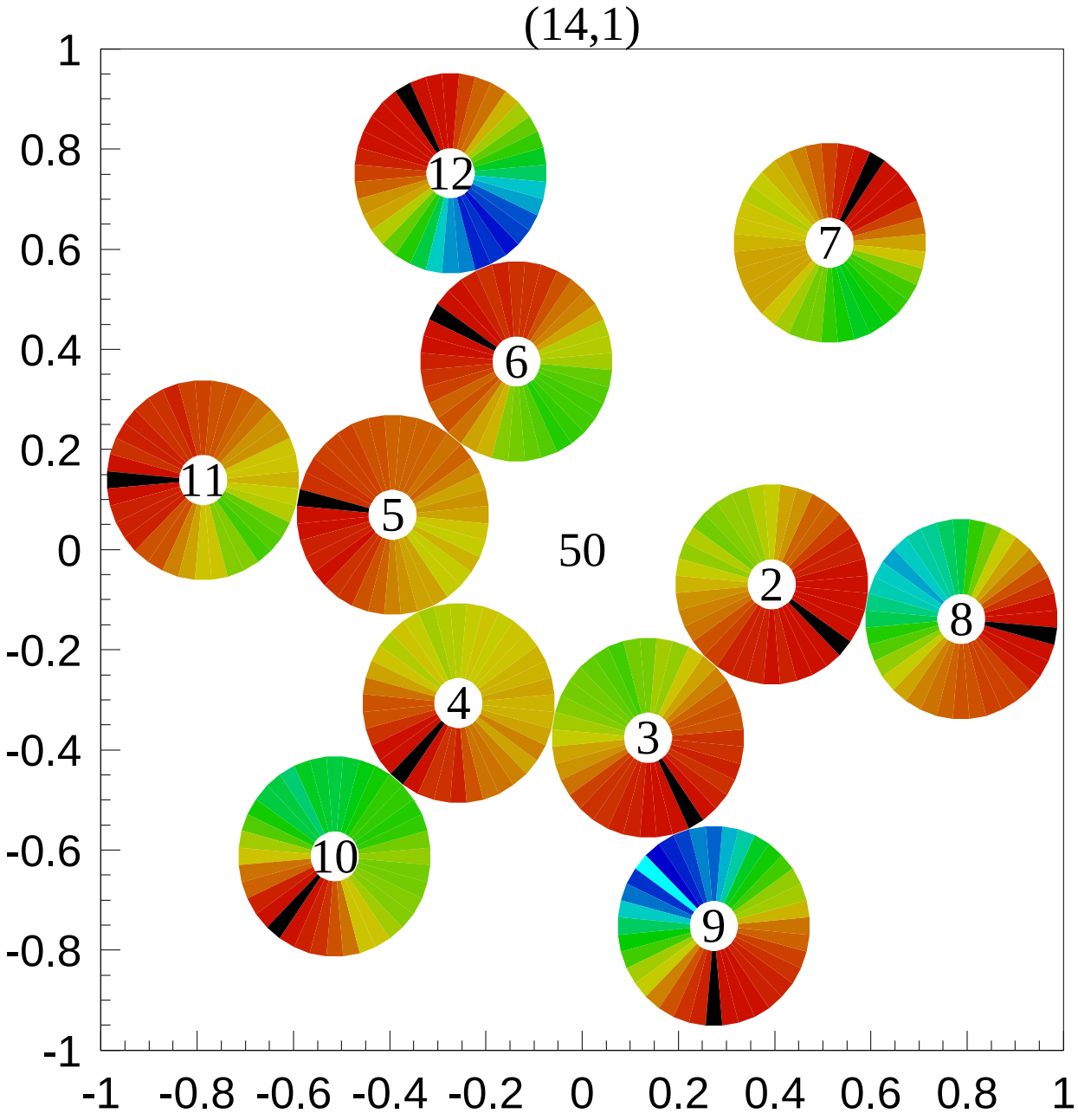

(13,49)
tilted LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

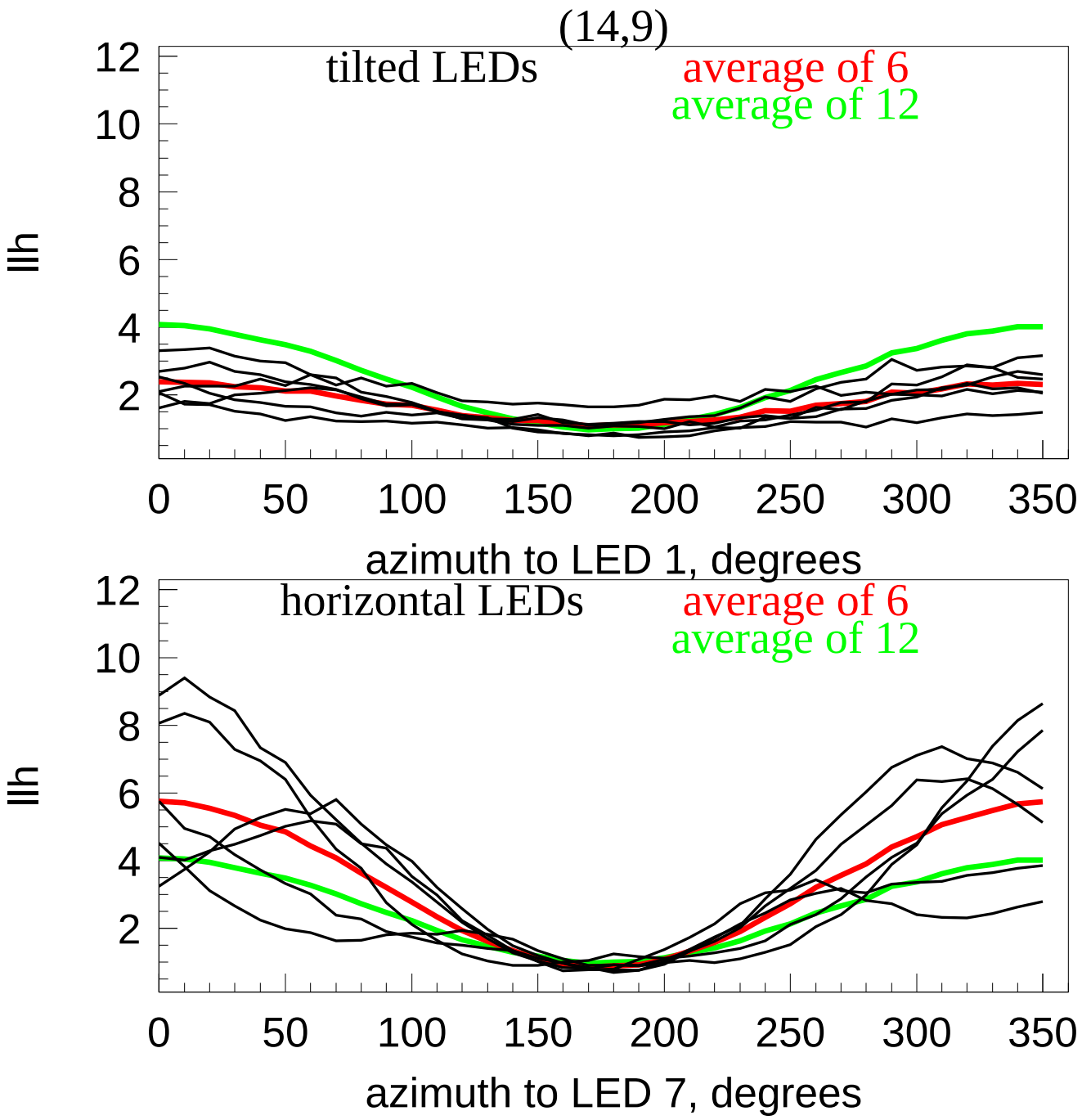

(13,49)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
3
4
250
2
1
12

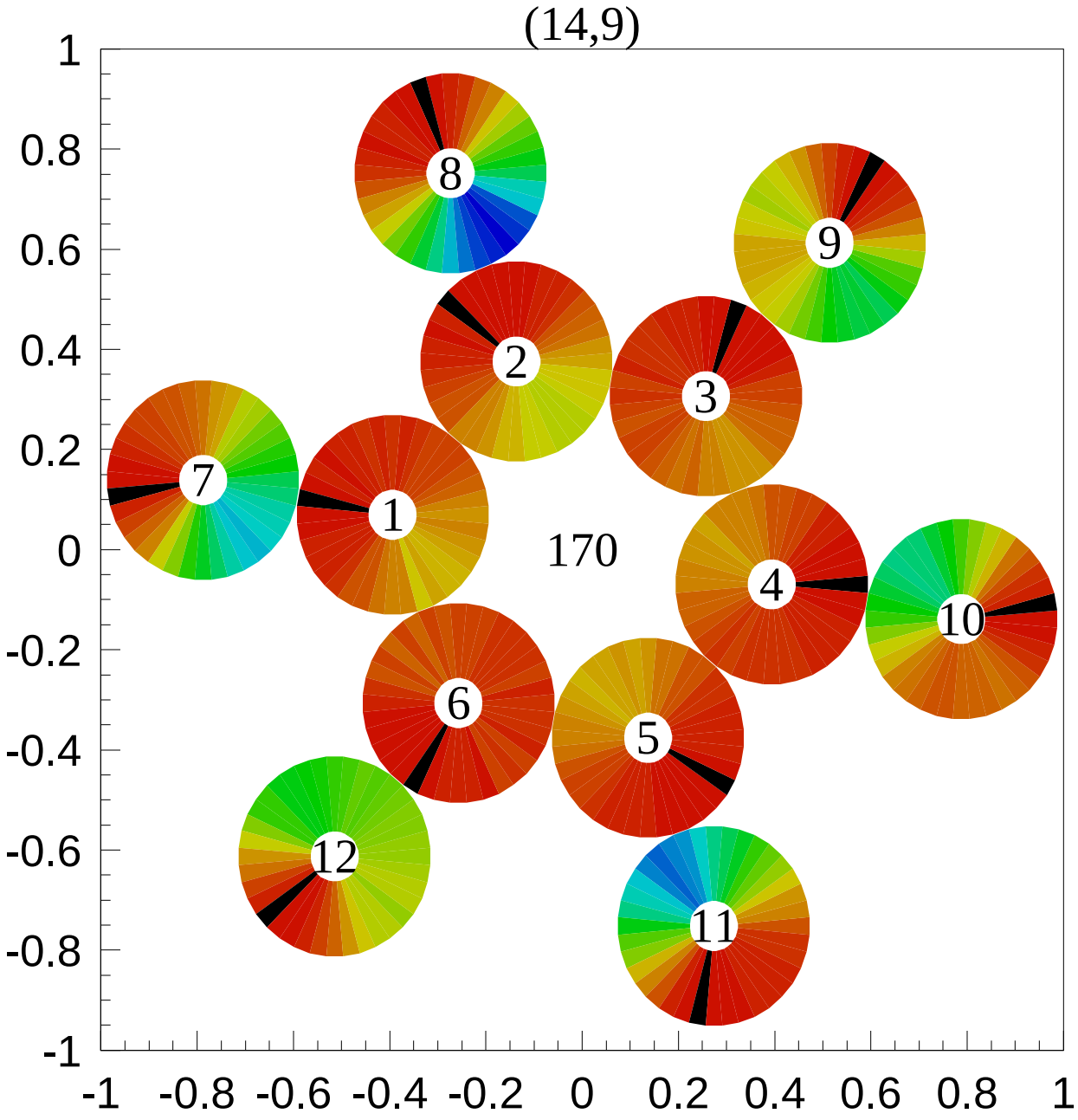

(13,56)
tilted LEDs
average of 6
average of 12
llh
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

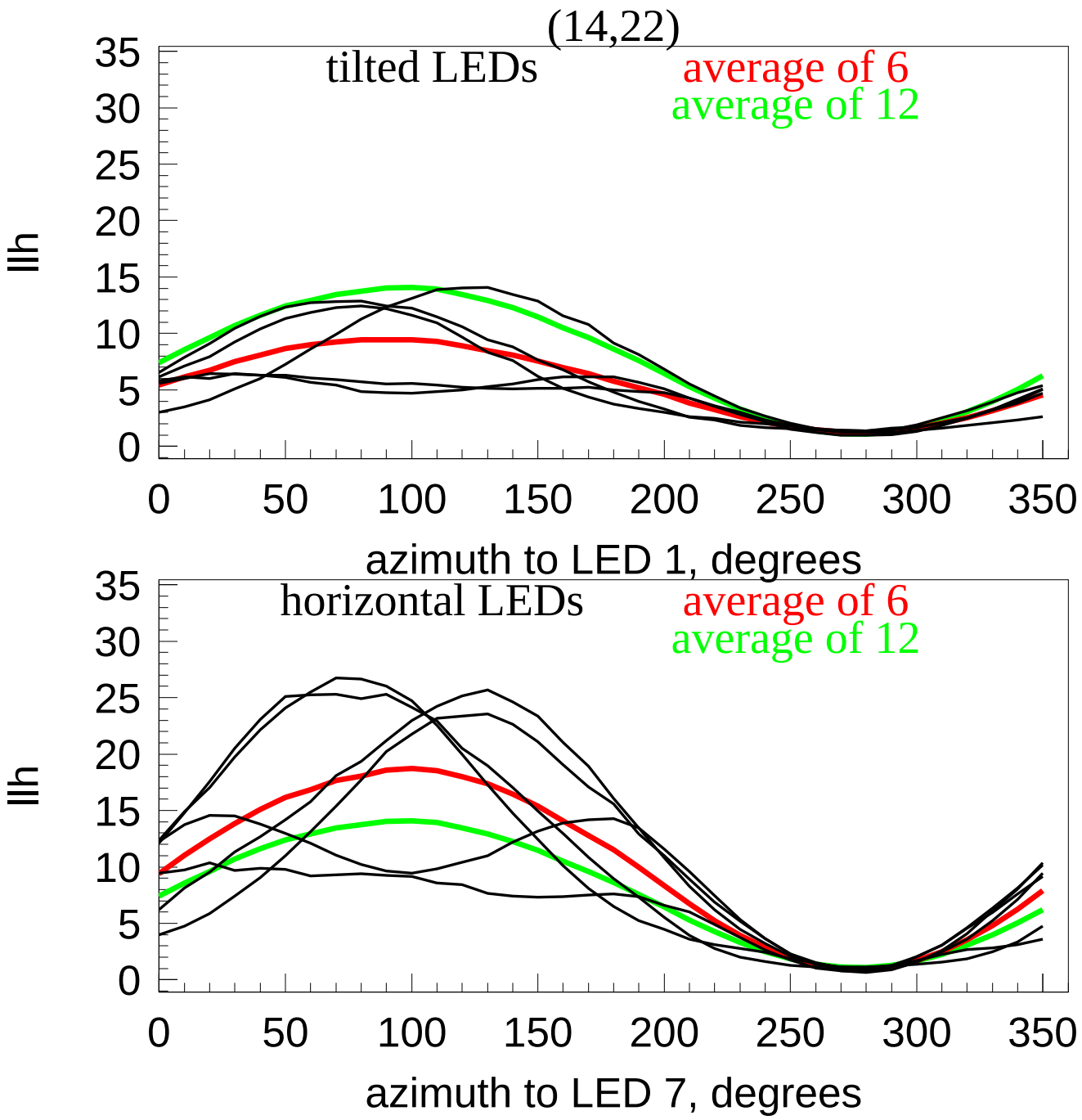

(13,56)
11
5
0
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

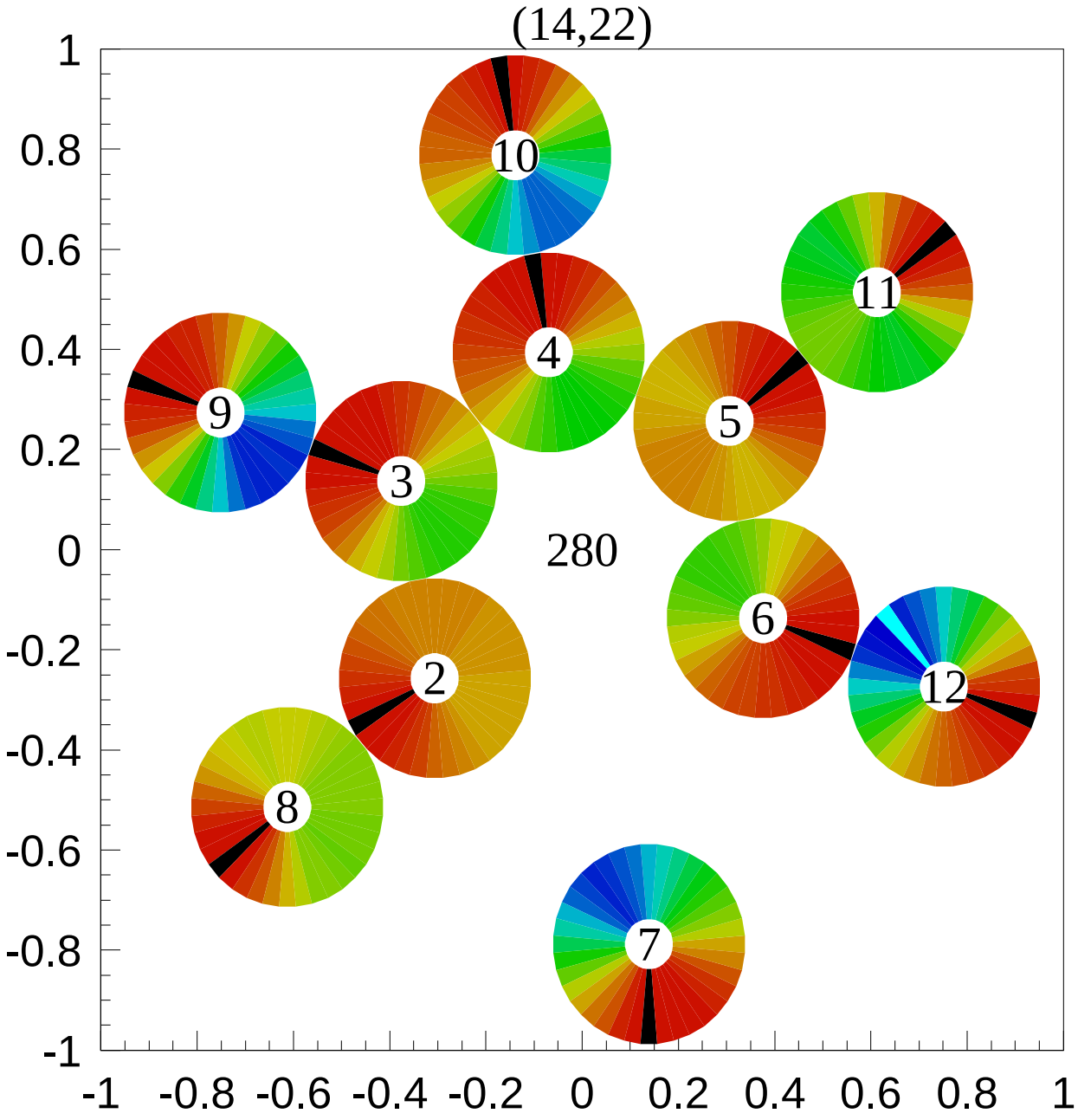

(14,1)
tilted LEDs
average of 6
average of 12
llh
9
8
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
9
8
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

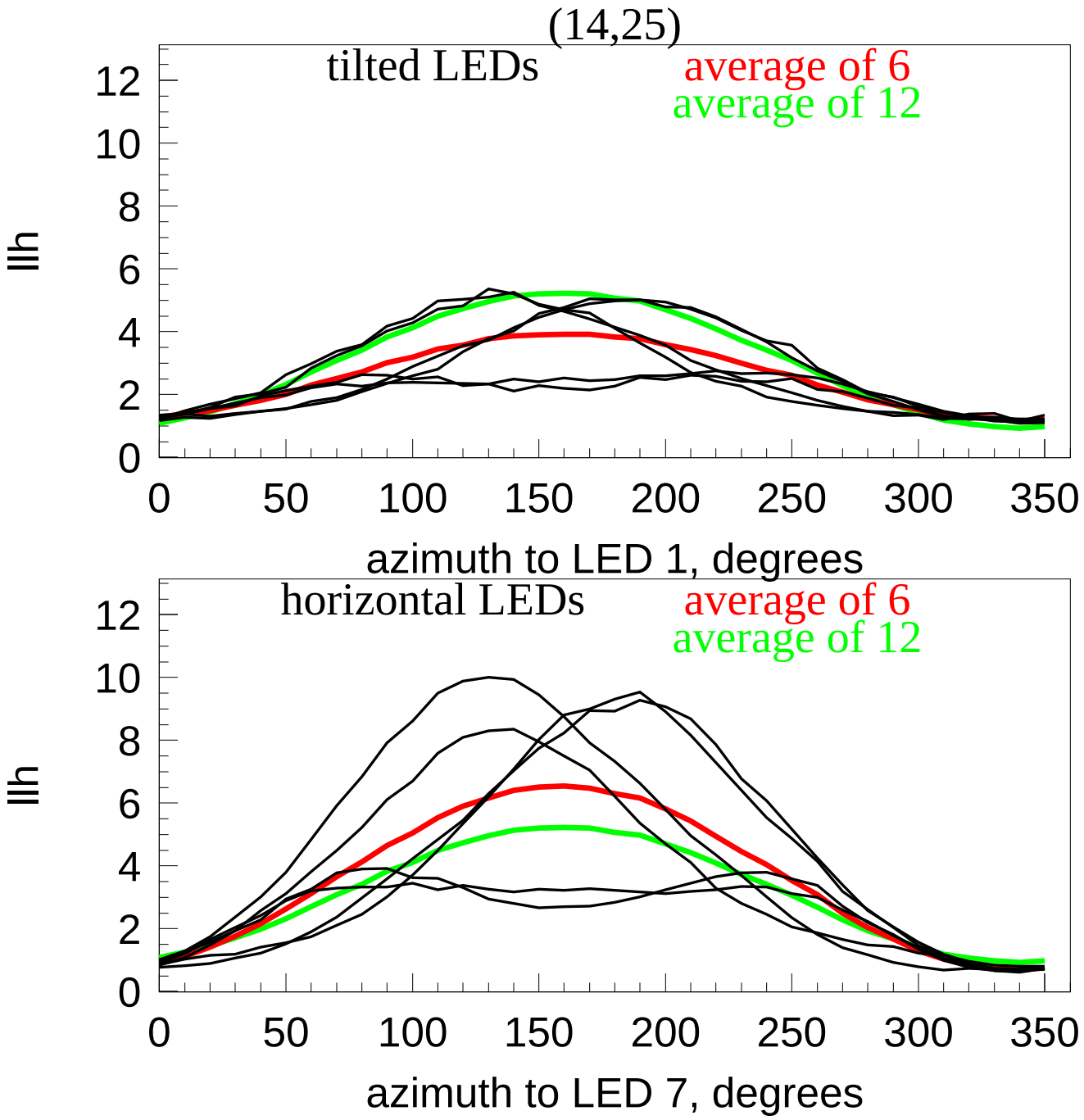

(14,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
7
6
11
5
50
2
8
4
3
10
9

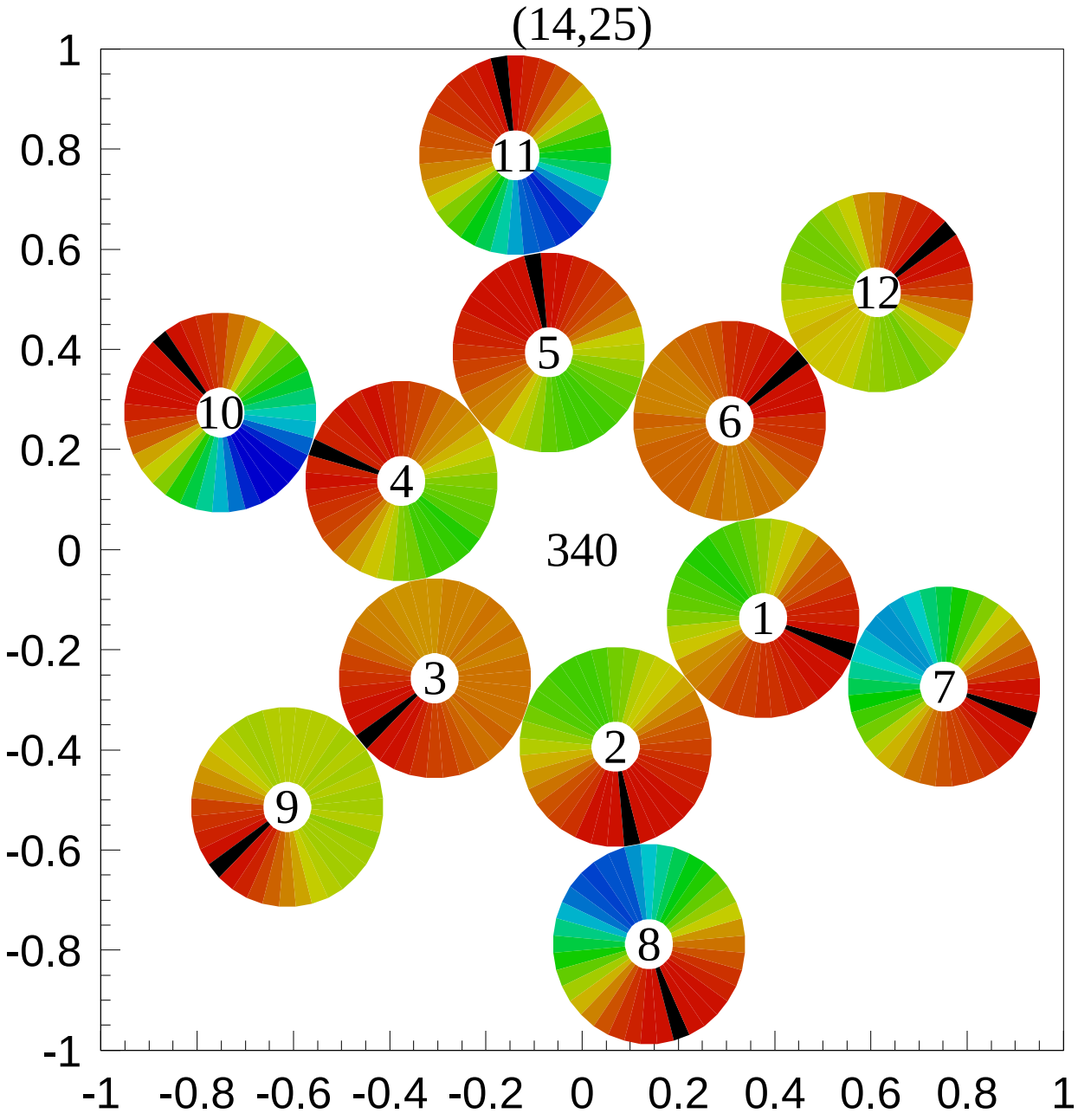

(14,9)
tilted LEDs
average of 6
average of 12
Ilh
12
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

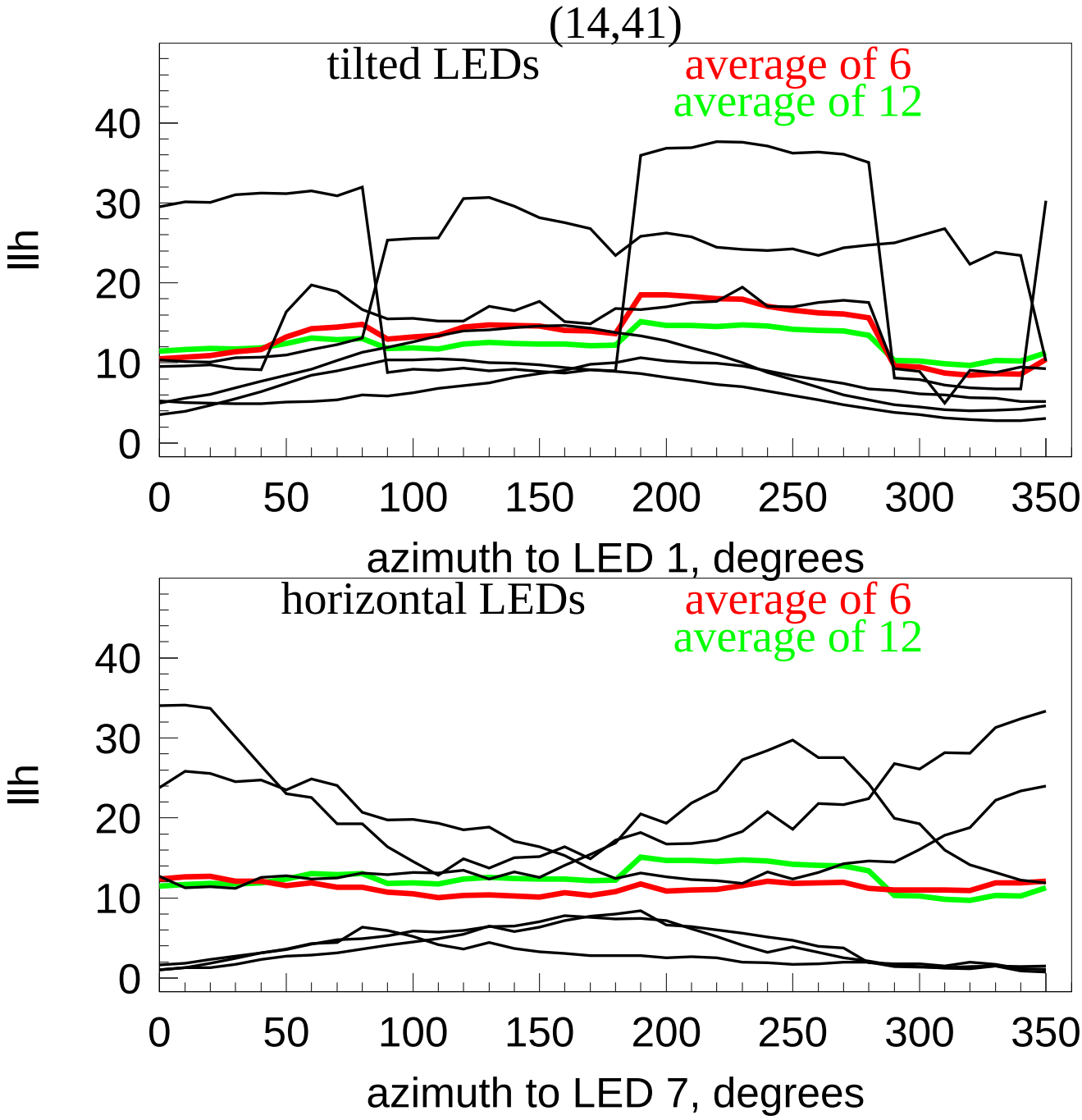

(14,9)
170
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

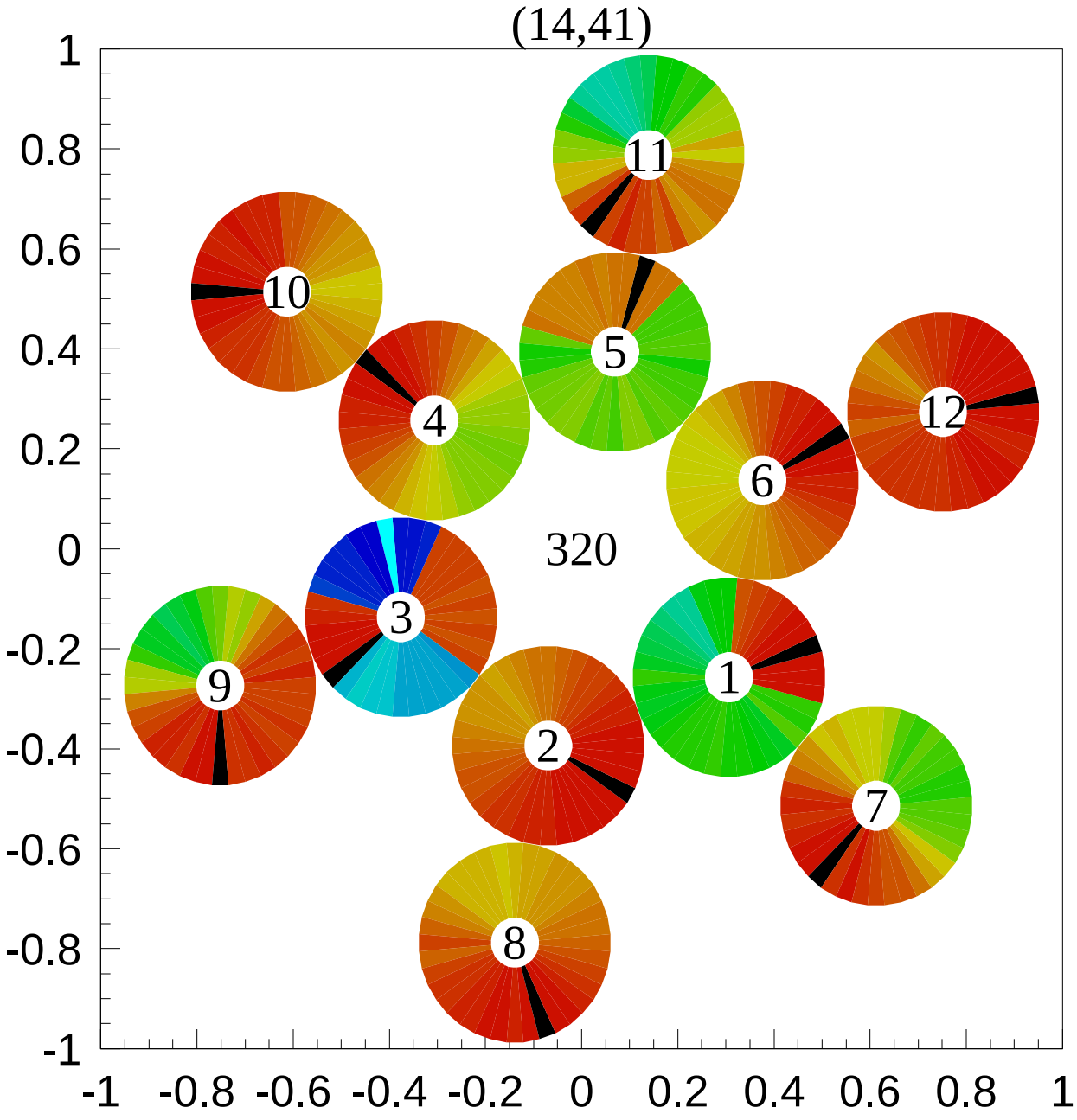

(14,22)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

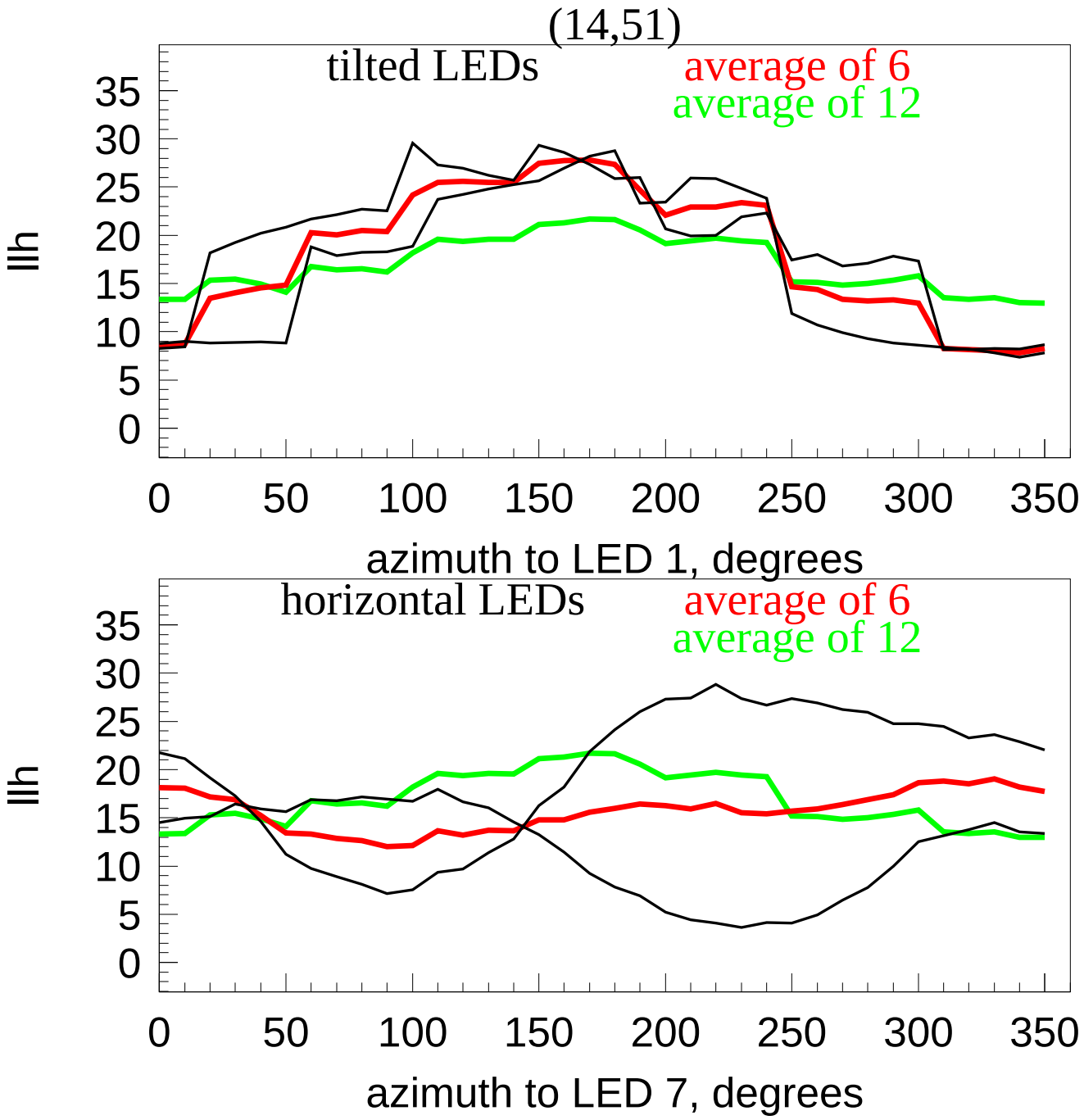

(14,22)
280
10
11
4
9
5
3
6
12
2
8
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

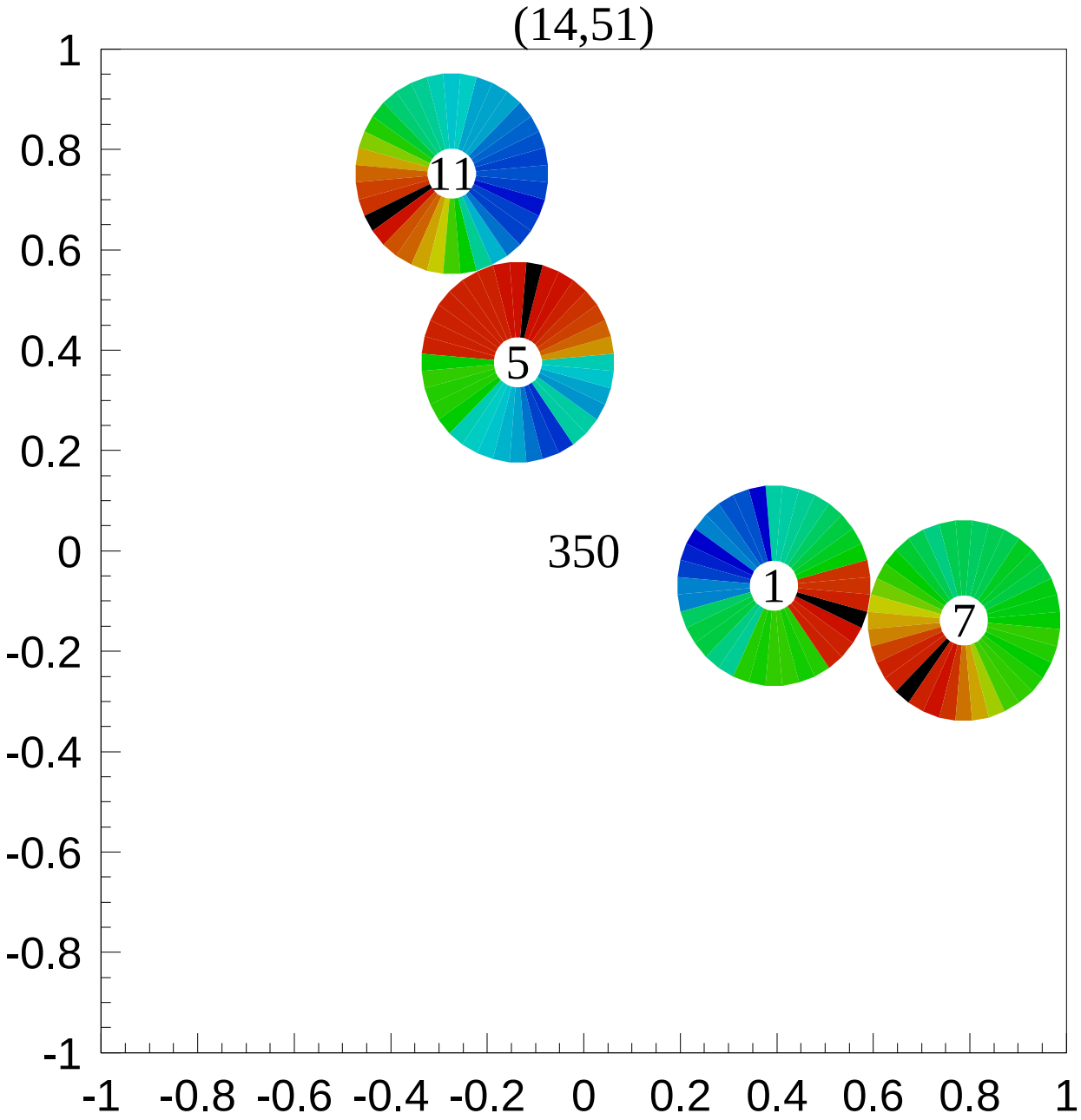

(14,25)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

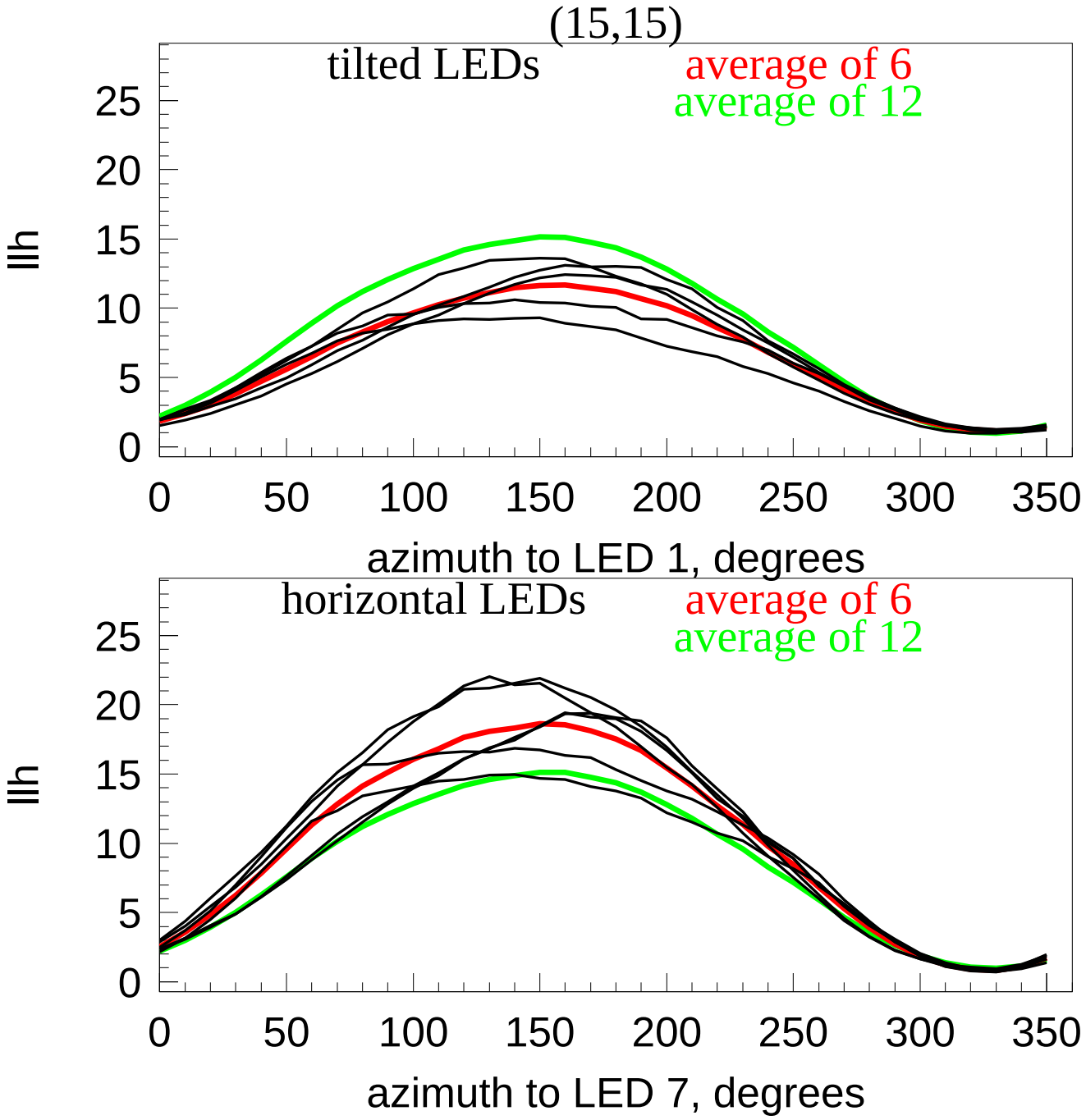

(14,25)
340
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

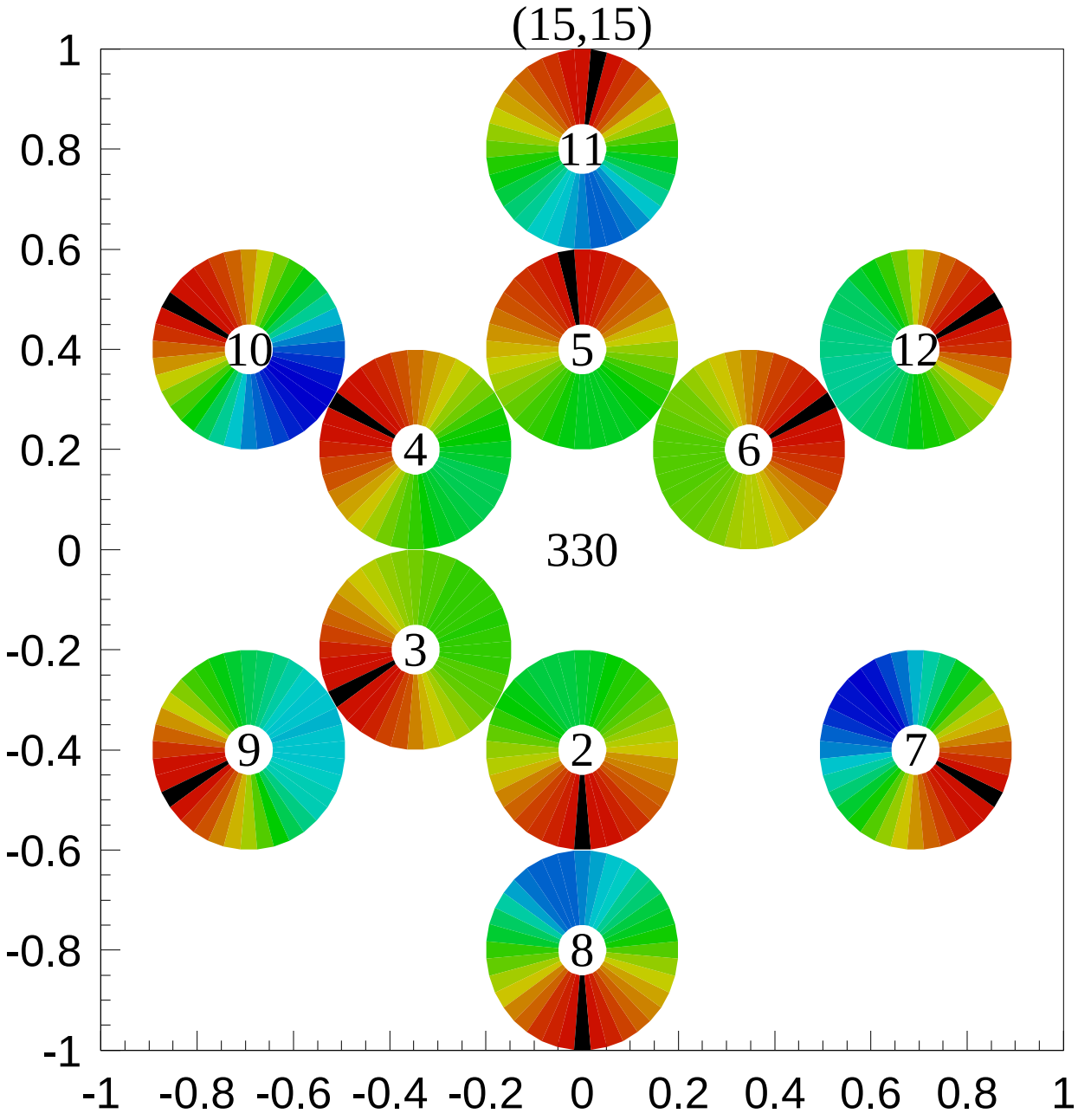

(14,41)
tilted LEDs
average of 6
average of 12
llh
0
10
20
30
40
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
0
10
20
30
40
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

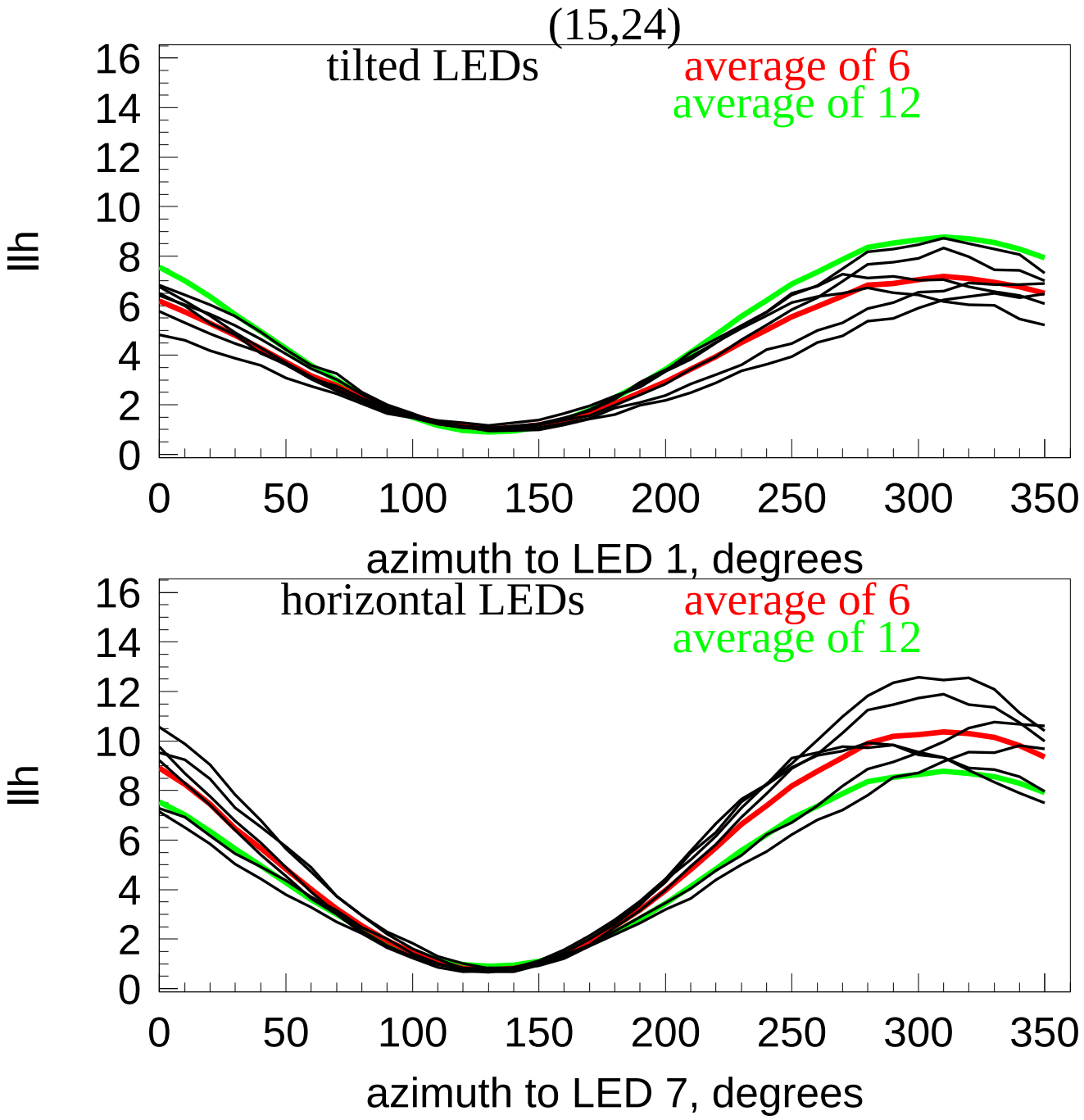

(14,41)
320
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

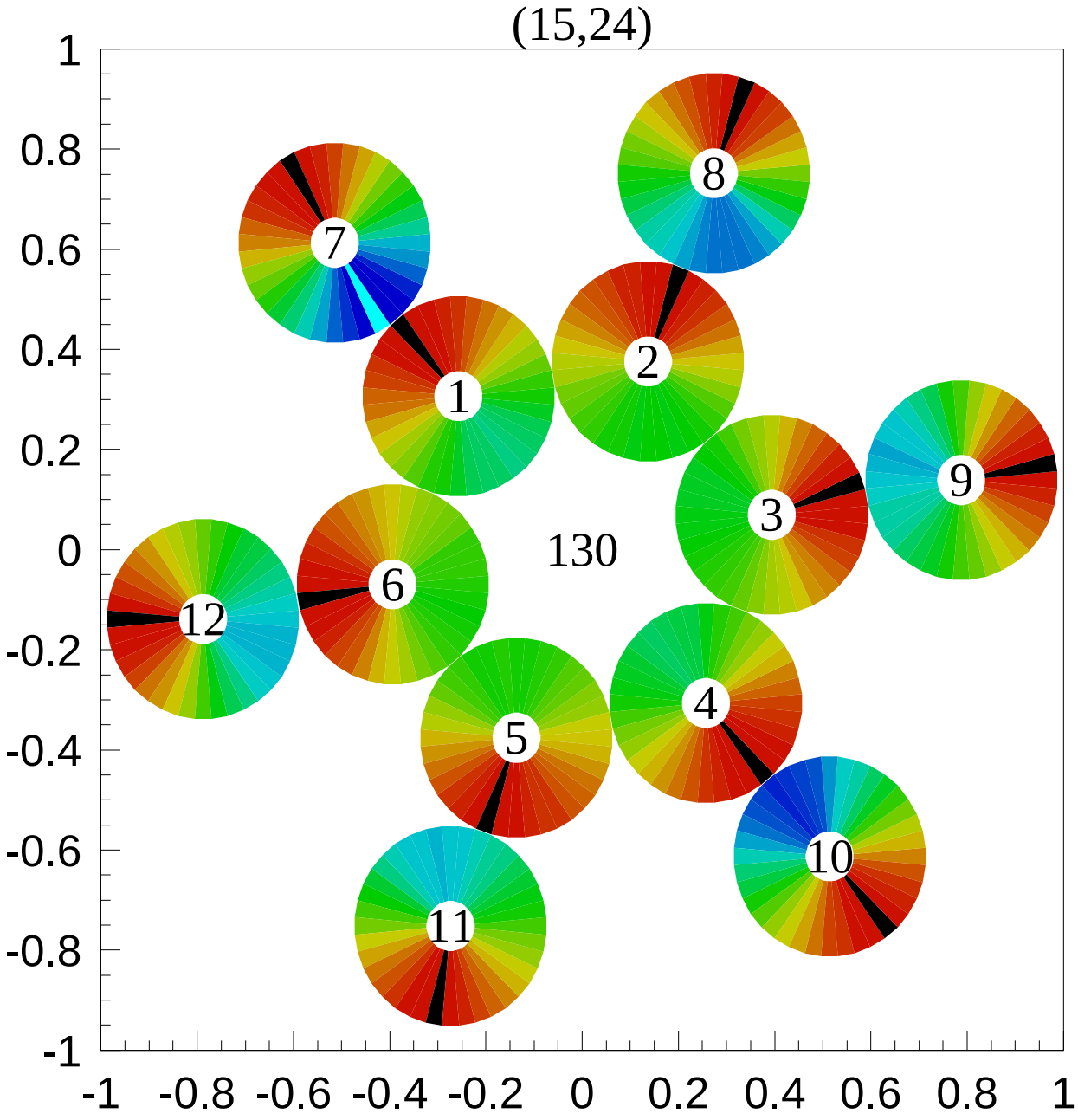

(14,51)
tilted LEDs
average of 6
average of 12
Ilh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

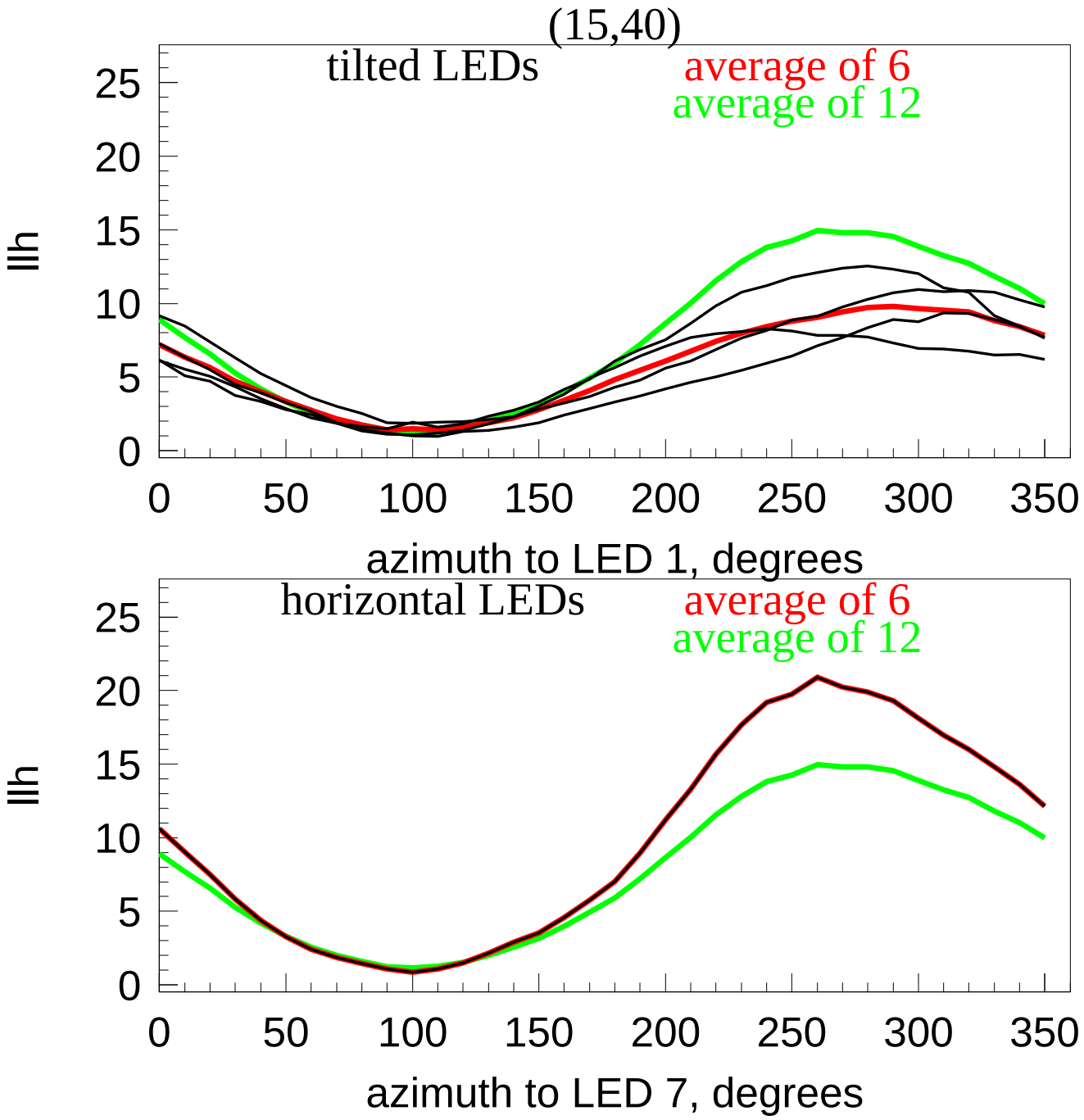

(14,51)
11
5
350
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

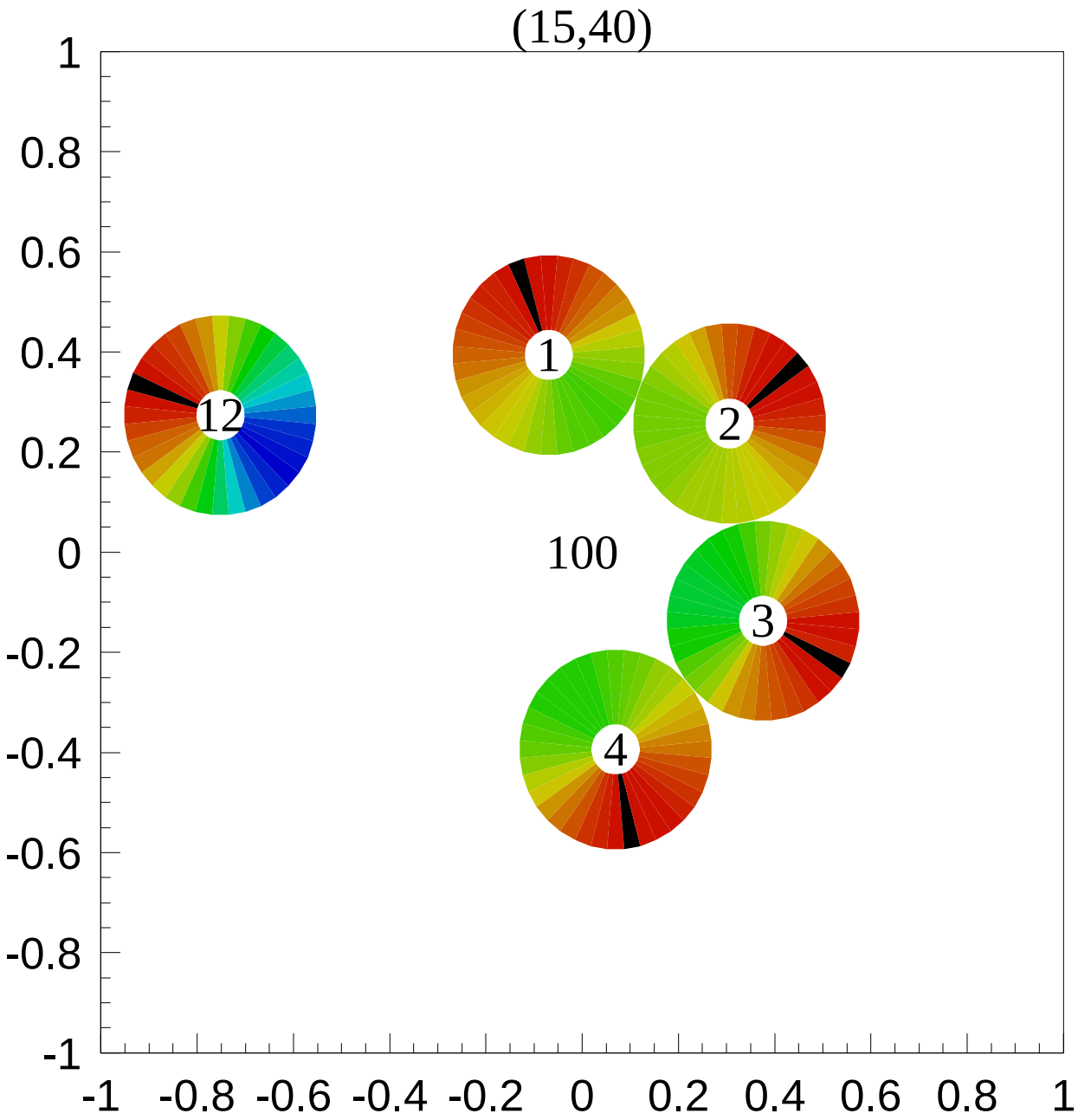

(15,15)
tilted LEDs
average of 6
average of 12
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

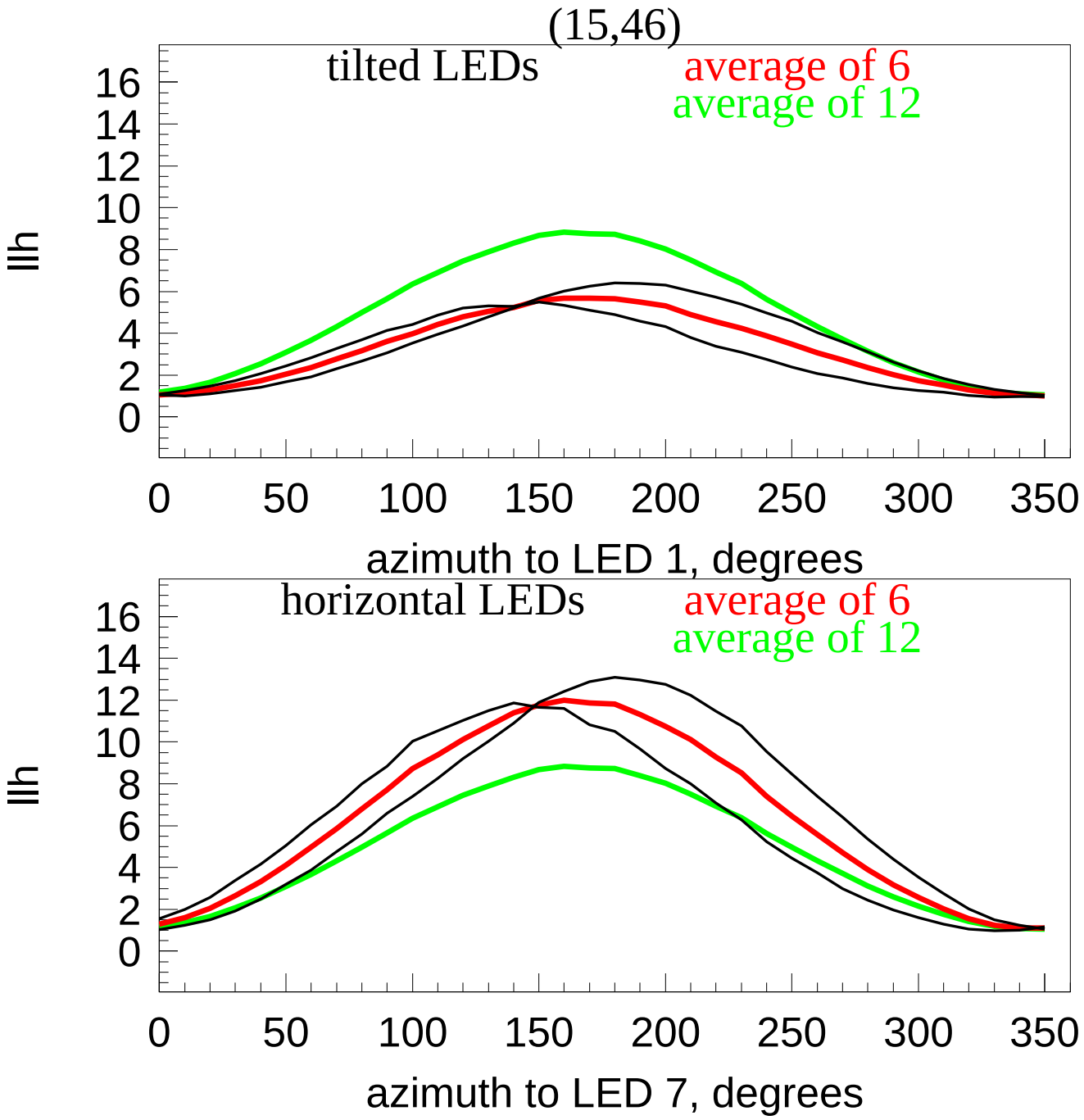

(15,15)
11
10
5
12
4
6
330
3
9
2
7
8
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

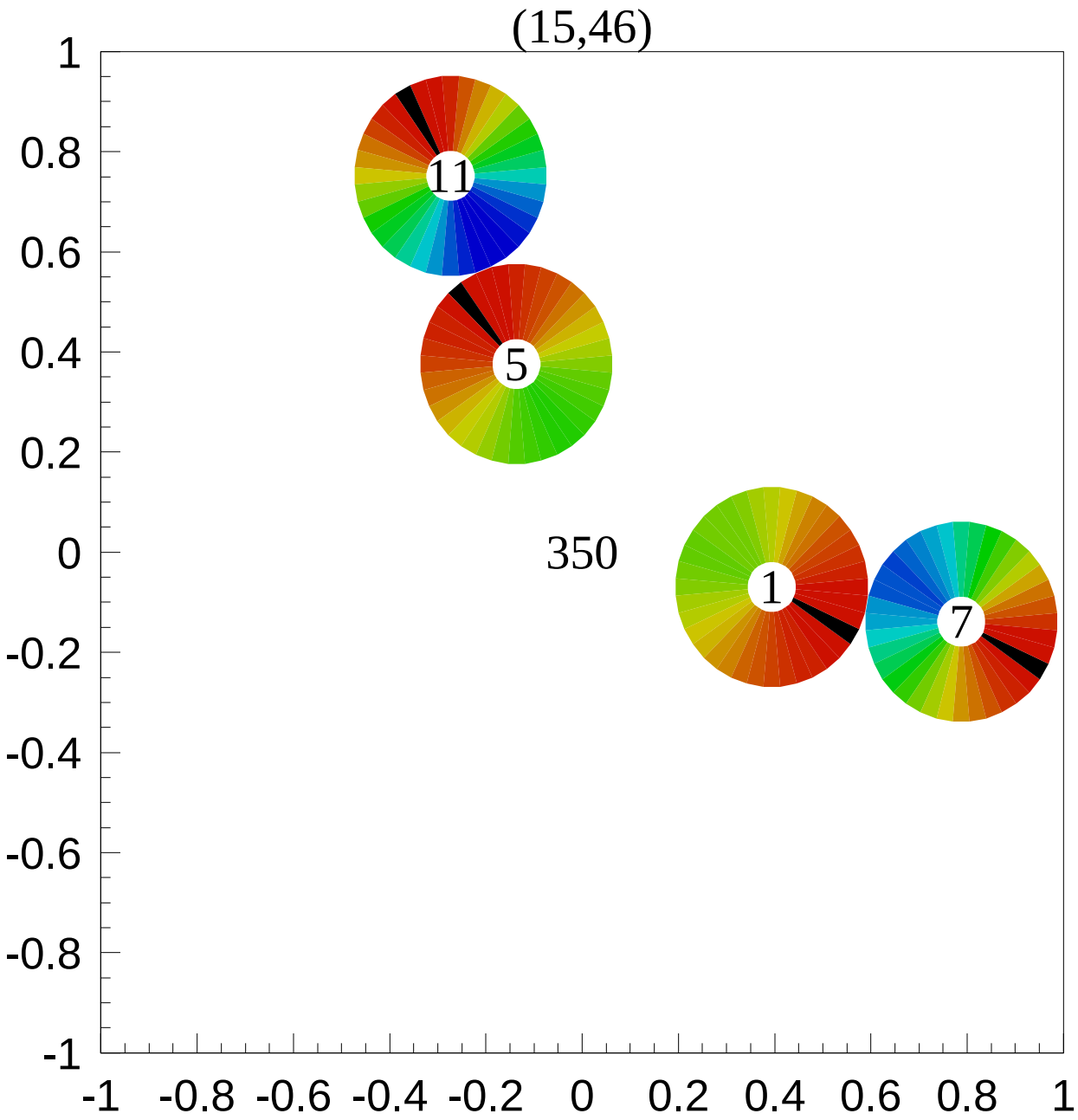

(15,24)
tilted LEDs
average of 6
average of 12
Ilh
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

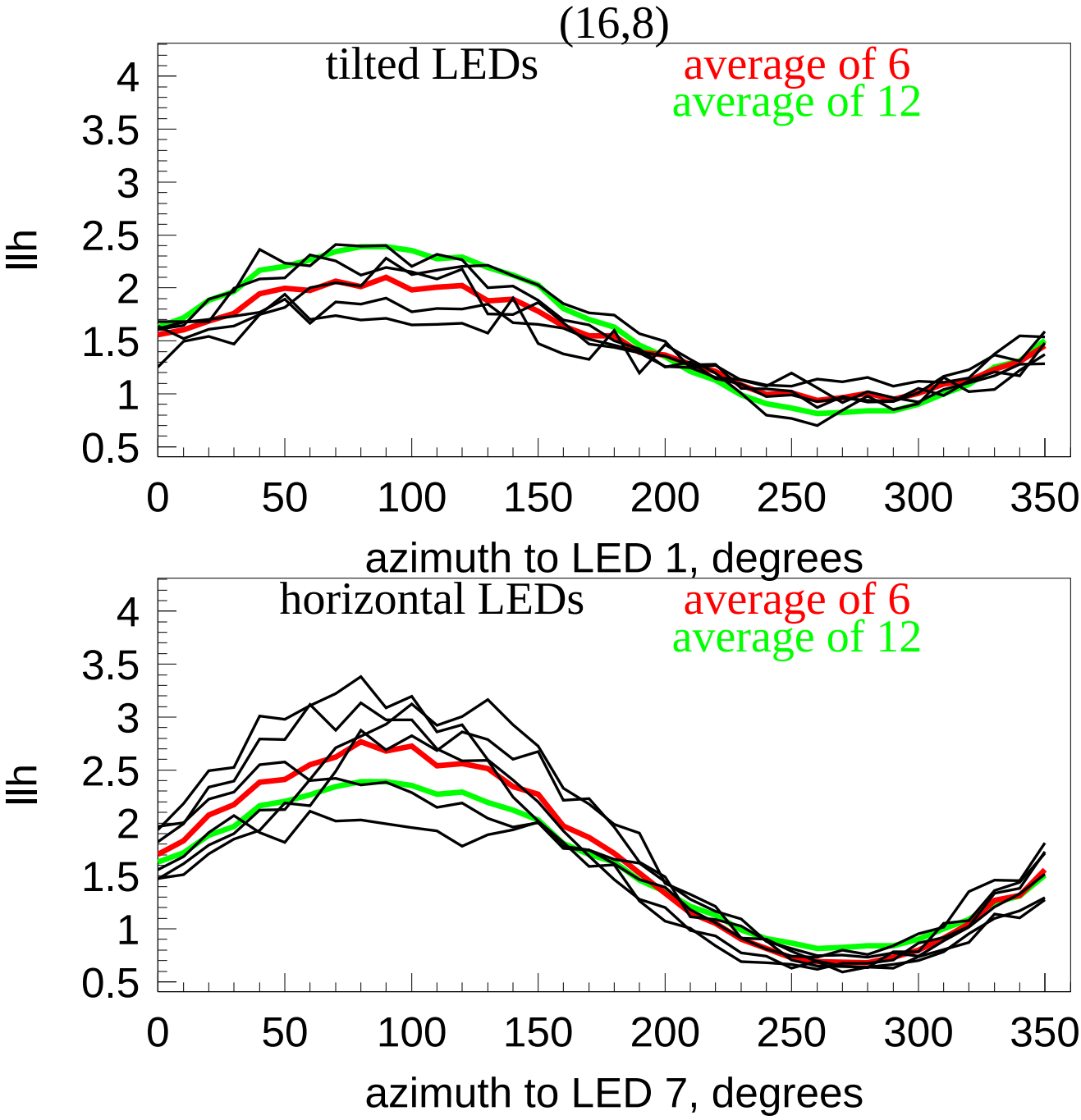

(15,24)
130
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

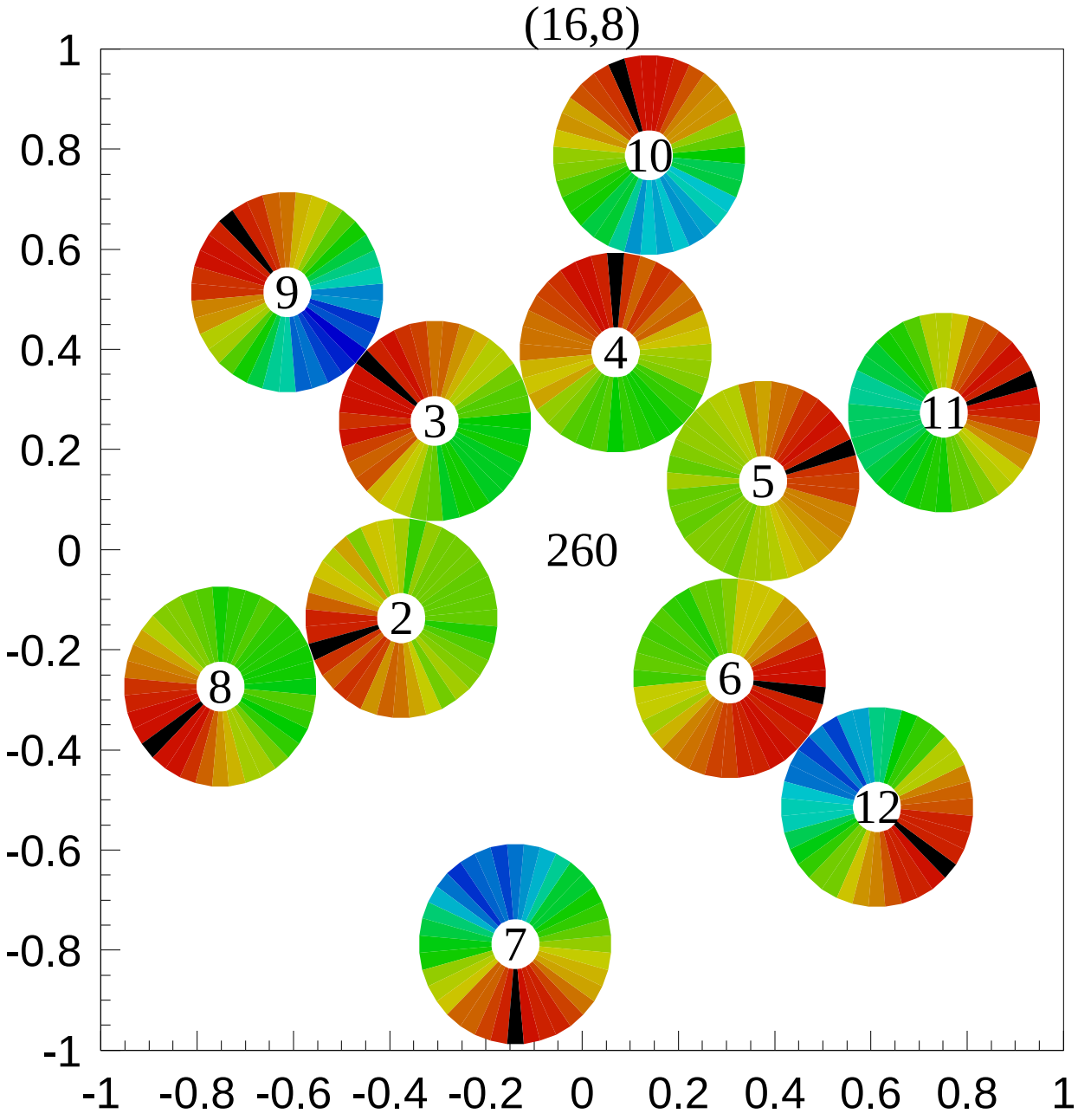

(15,40)
tilted LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

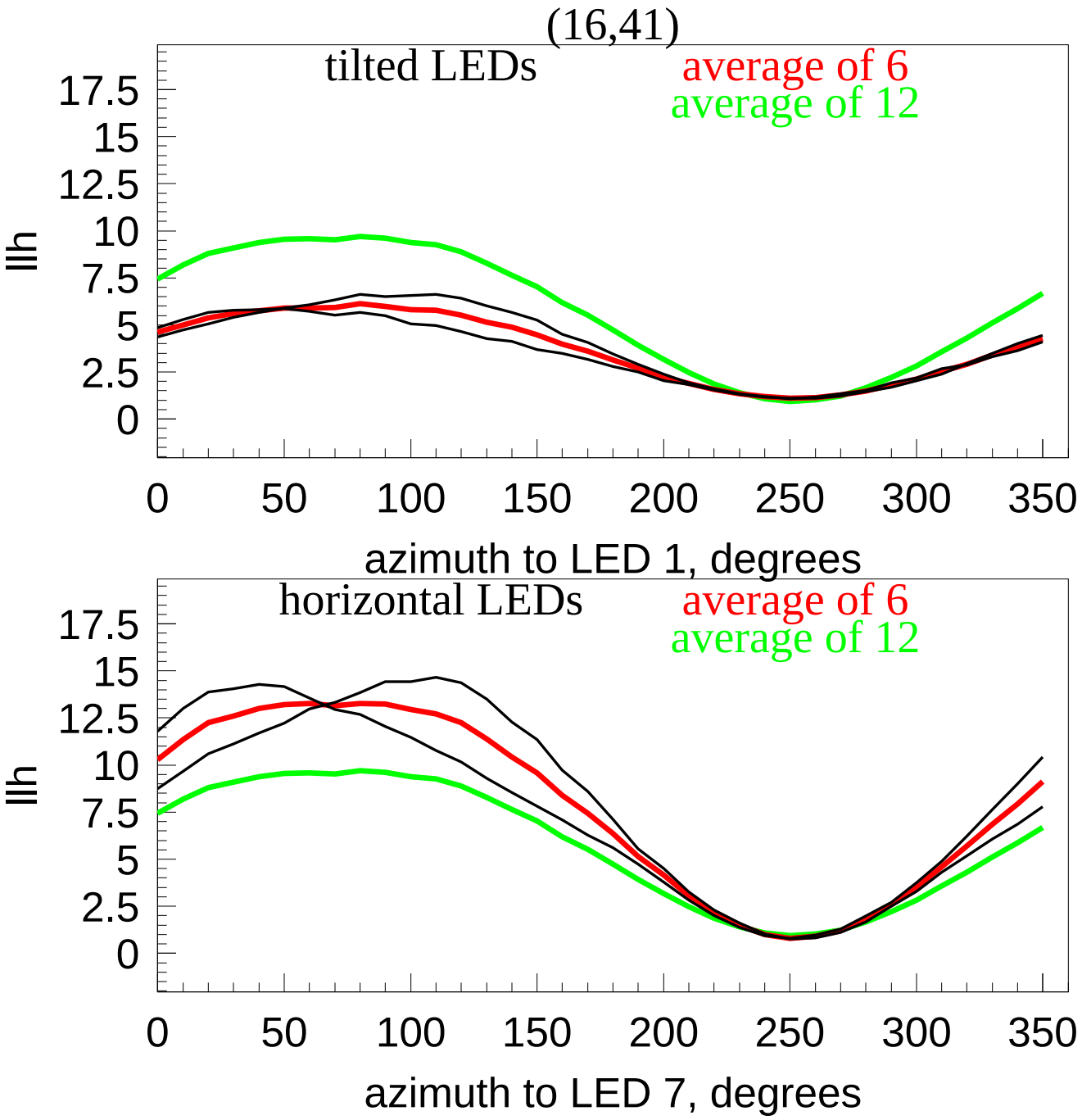

(15,40)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
1
2
100
3
4

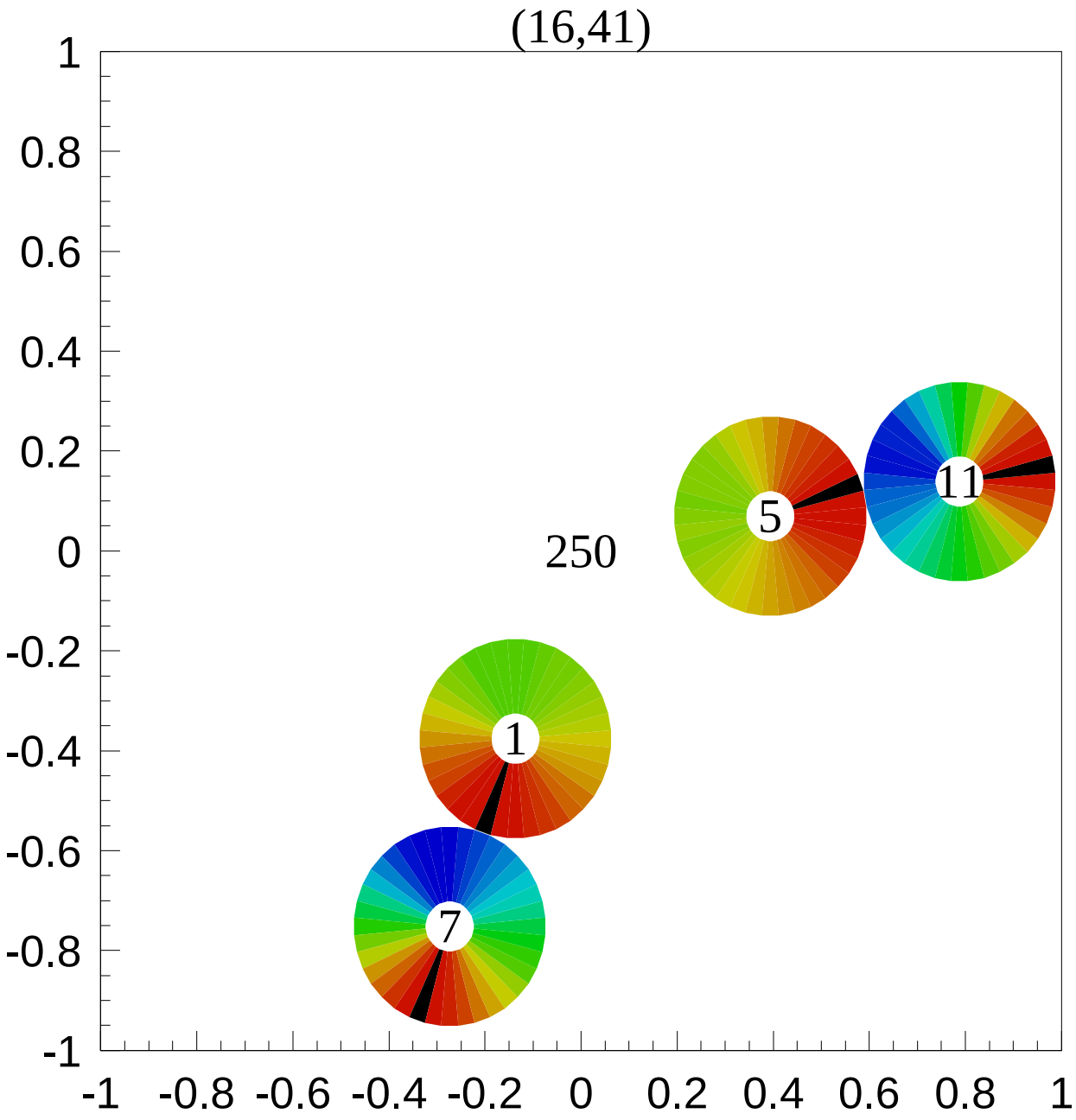

(15,46)
tilted LEDs
average of 6
average of 12
16
14
12
10
8
6
4
2
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
16
14
12
10
8
6
4
2
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

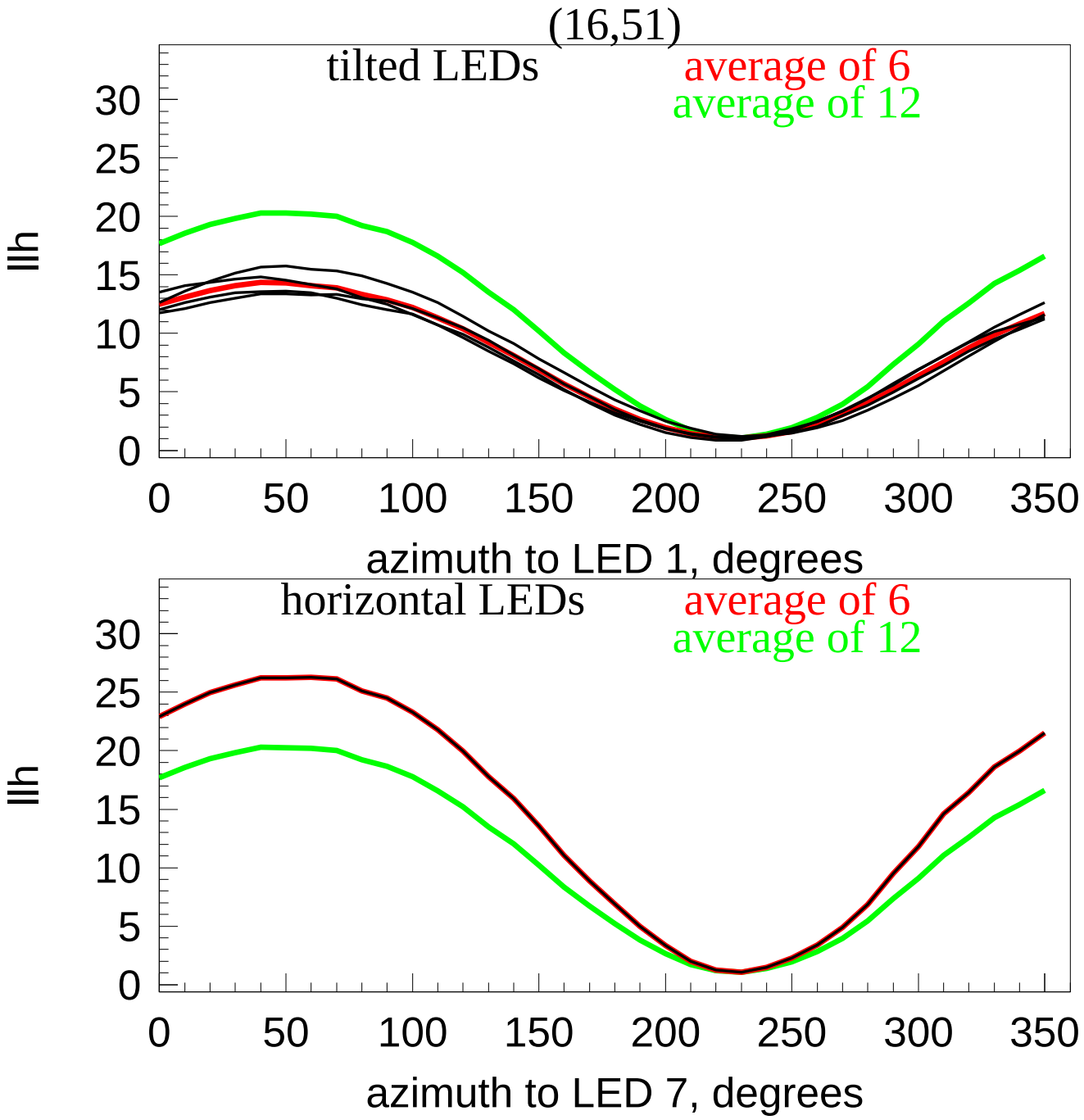

(15,46)
11
5
350
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

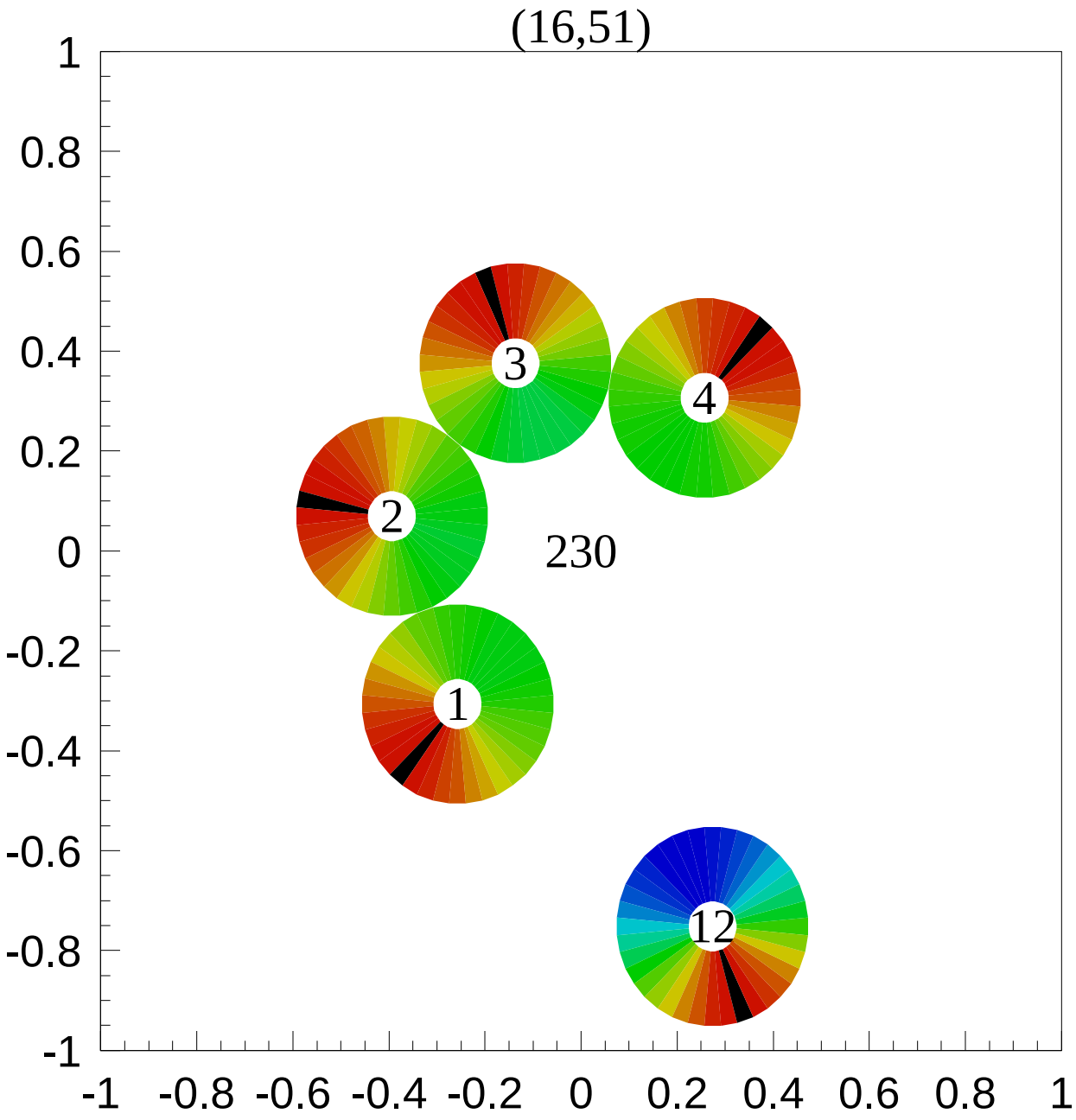

(16,8)
tilted LEDs
average of 6
average of 12
Ilh
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

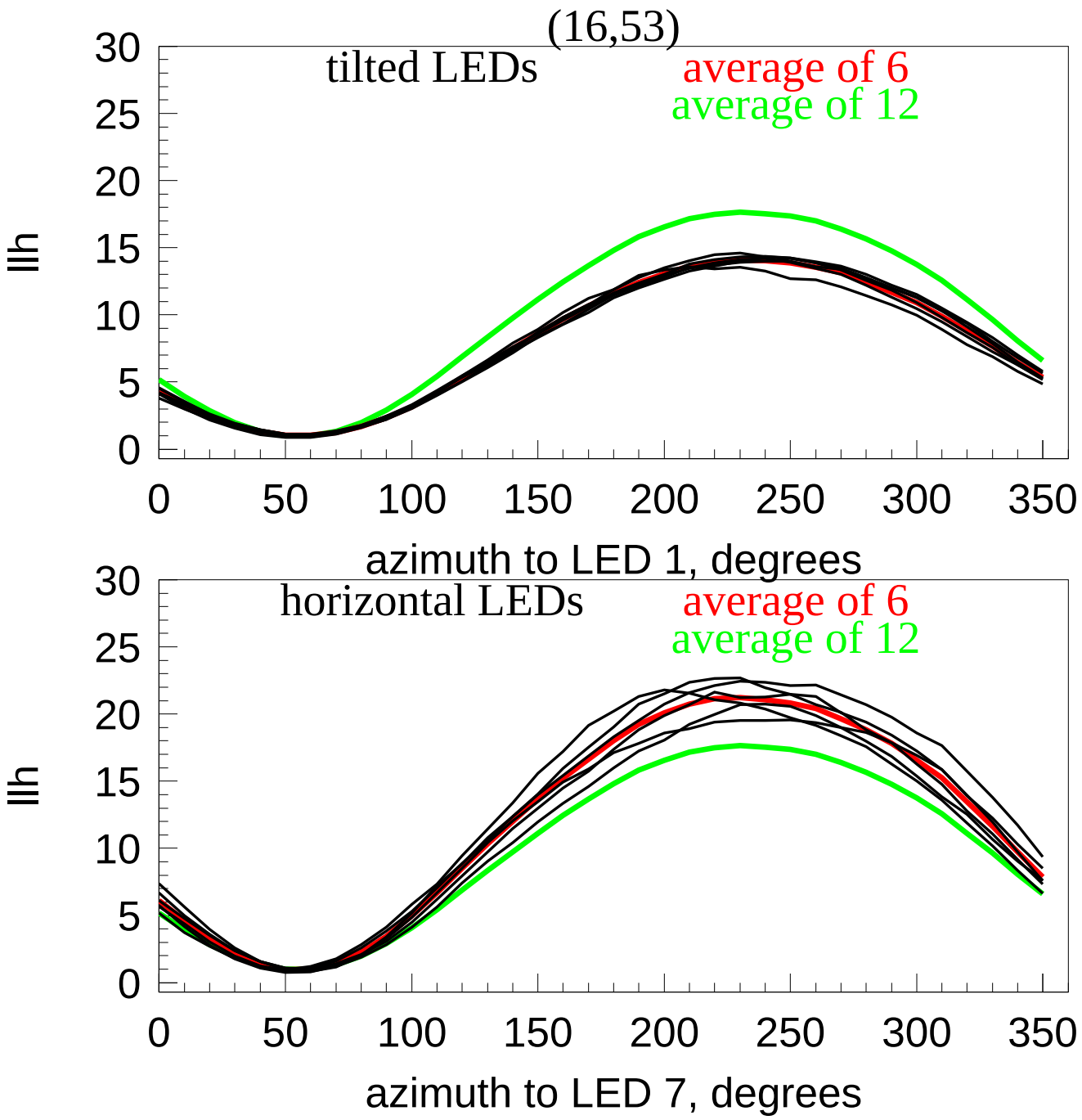

(16,8)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
9
4
3
11
5
260
2
8
6
12
7

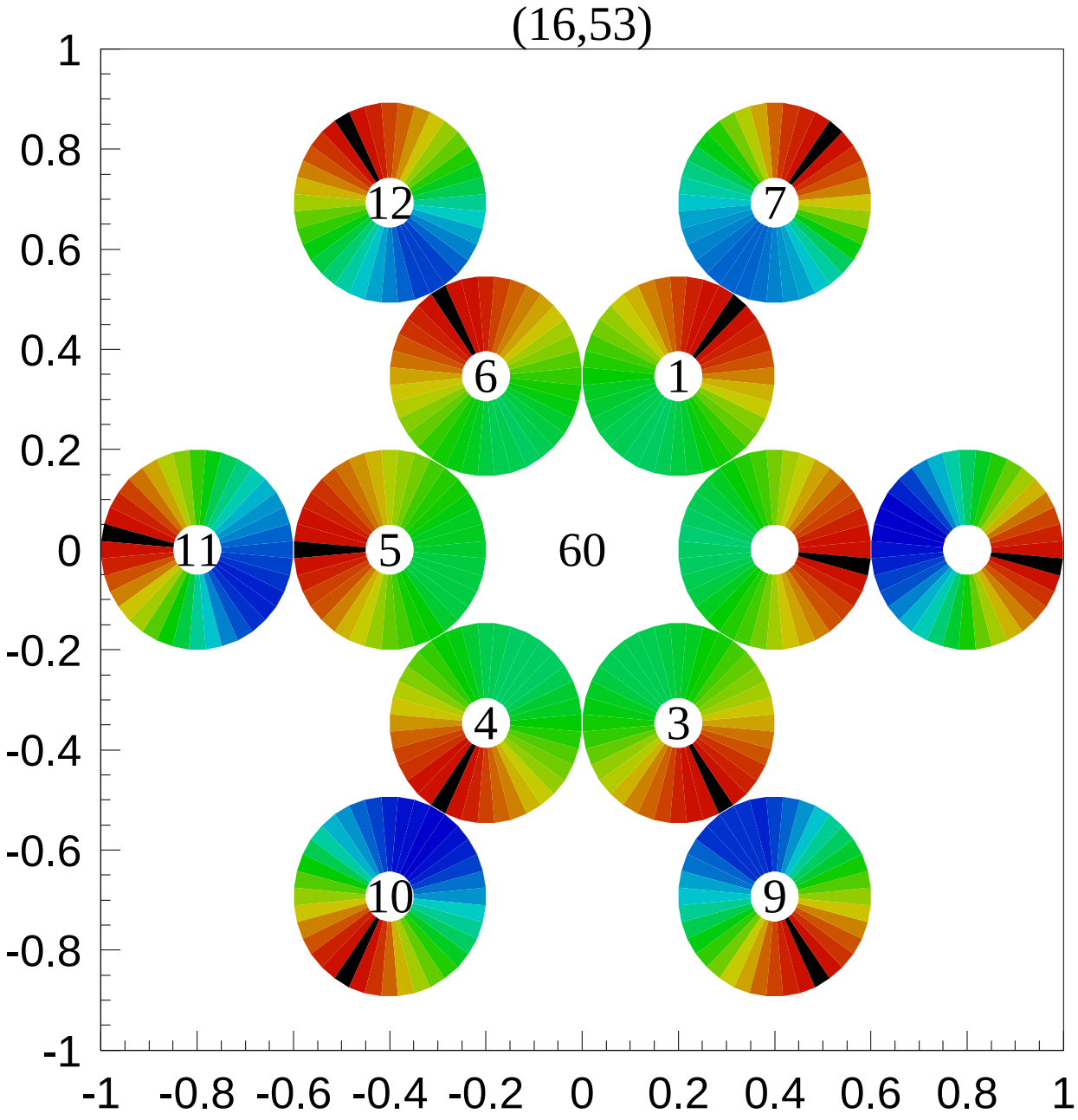

(16,41)
tilted LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

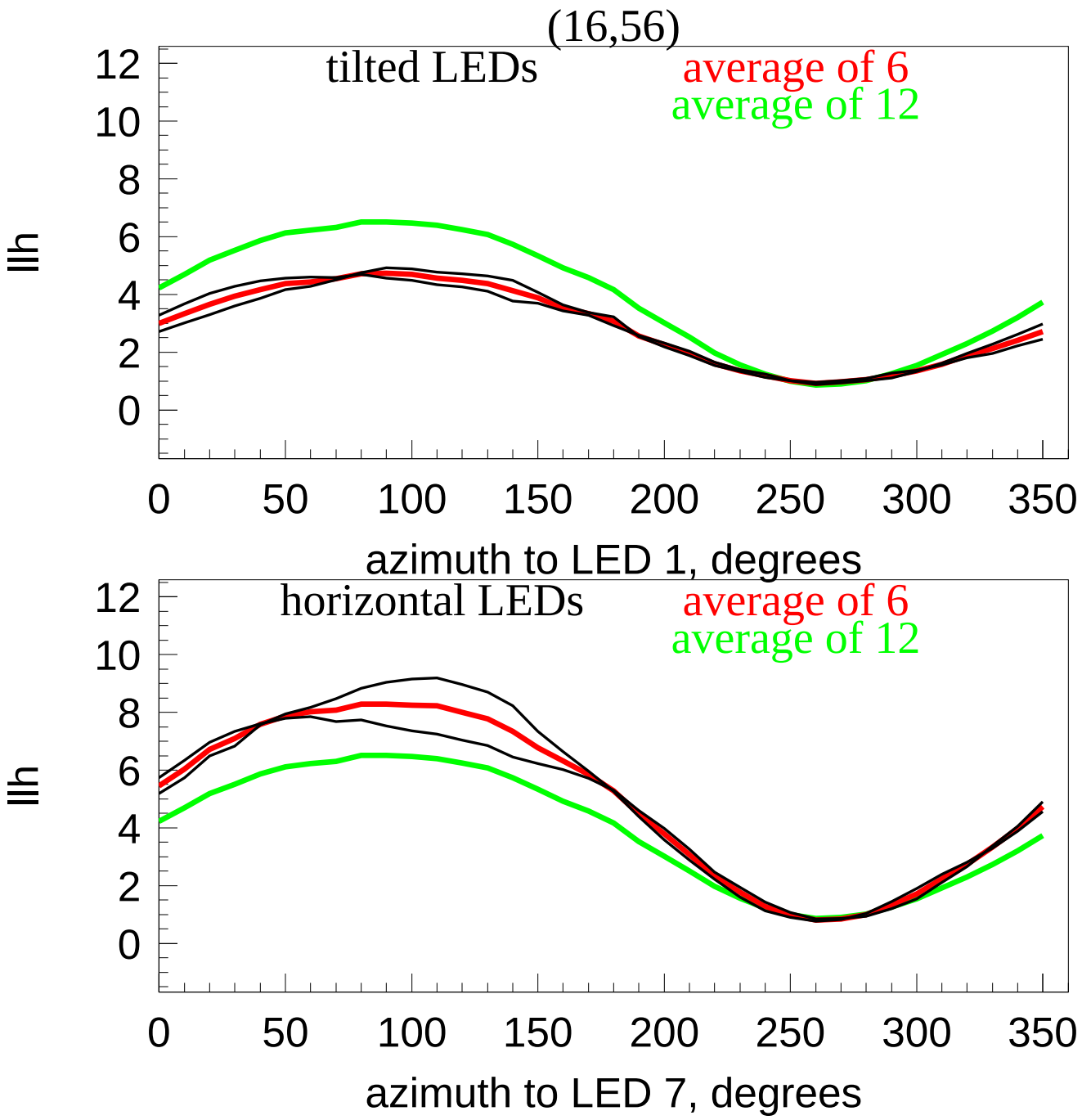

(16,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
250
5
11
1
7

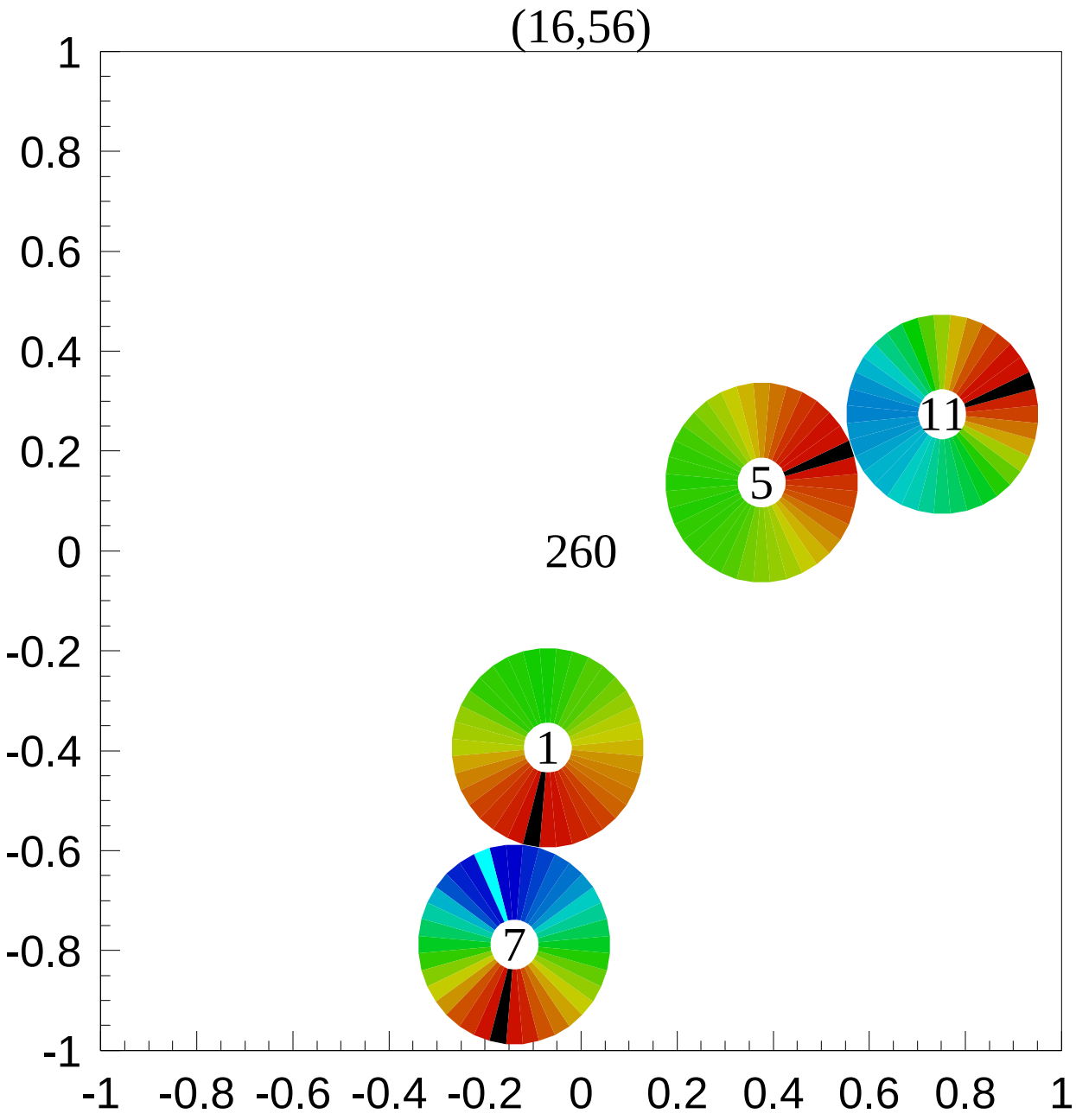

(16,51)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

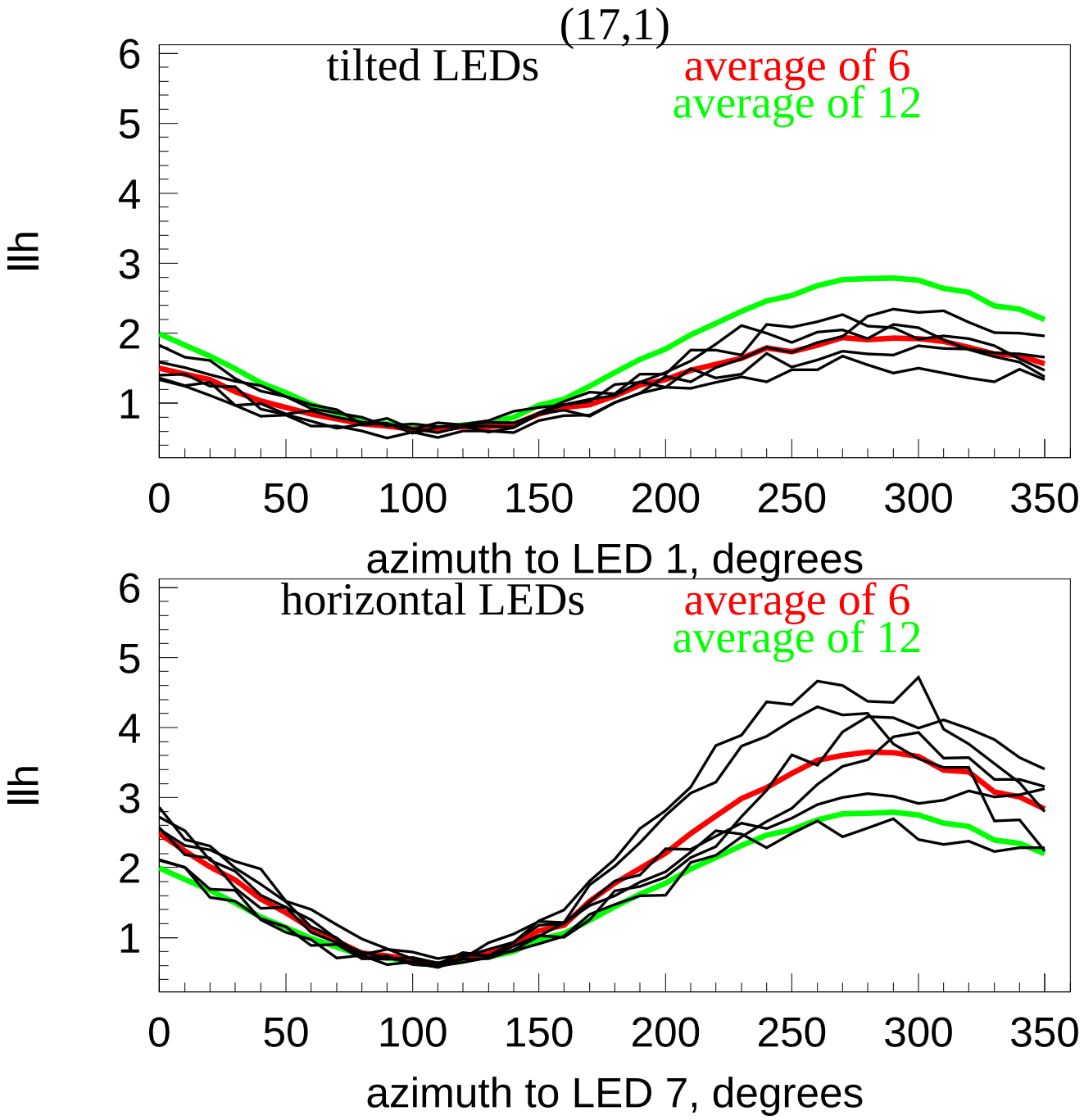

(16,51)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
3
4
2
230
1
12

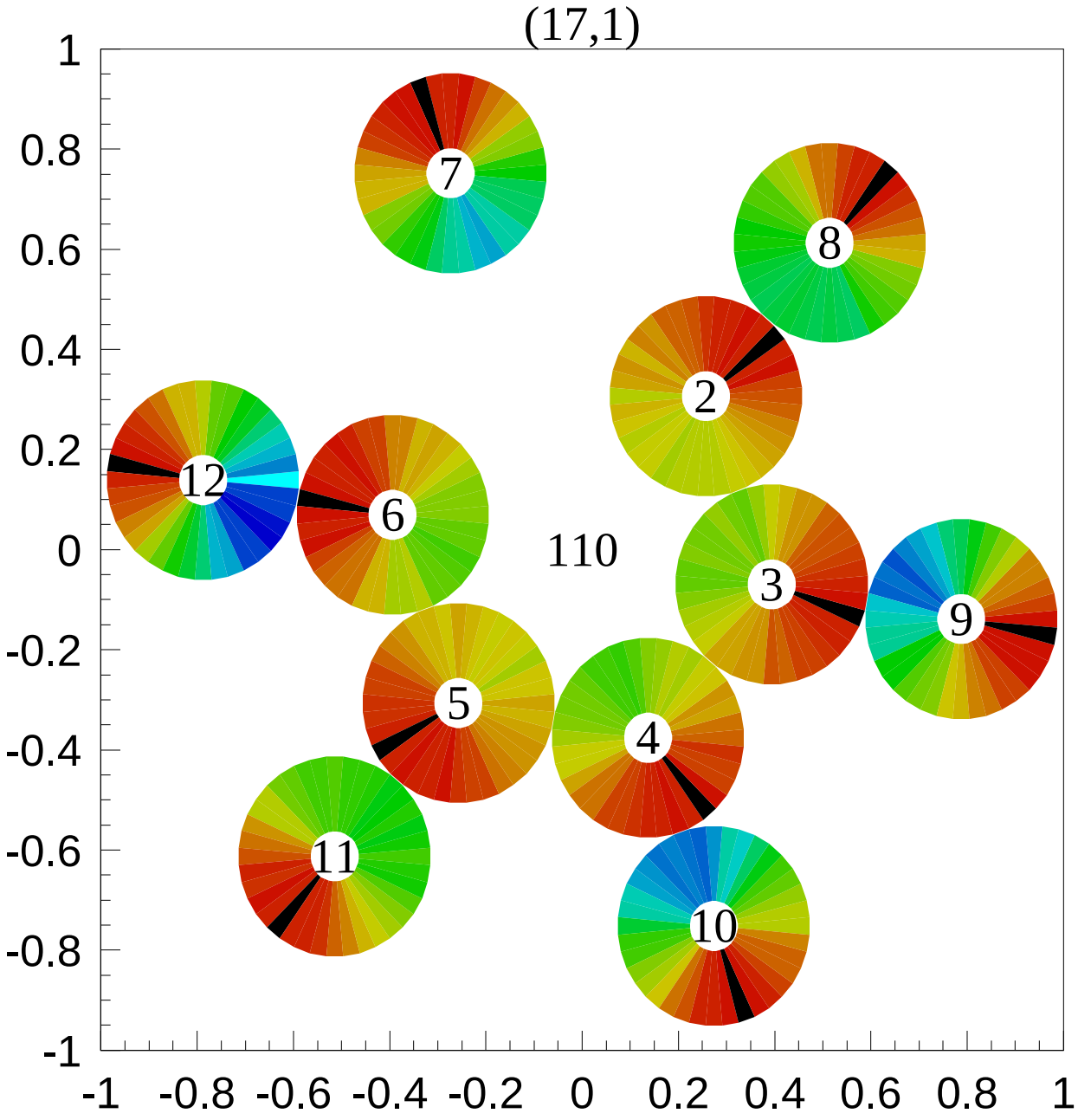

(16,53)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

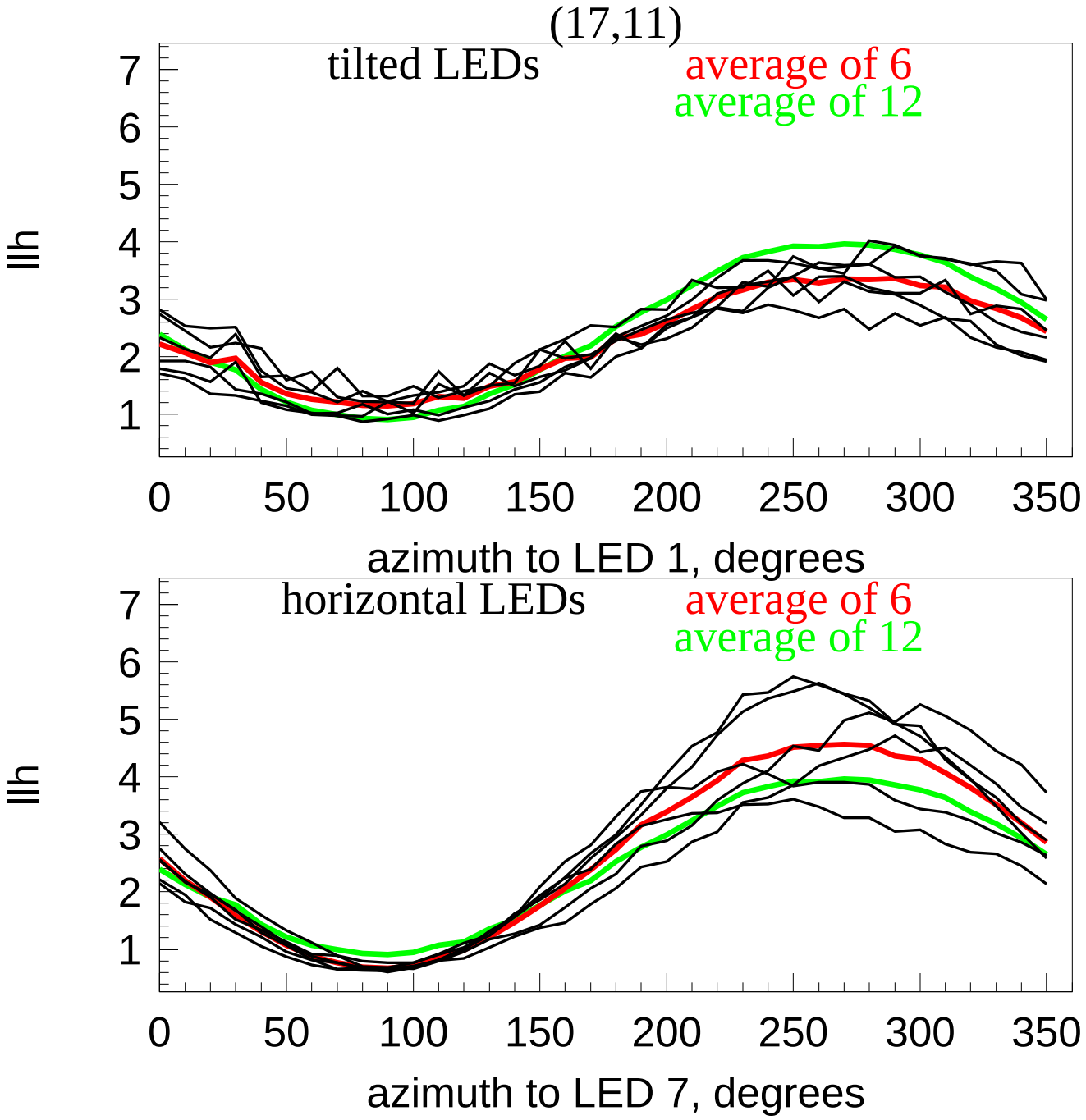

(16,53)
12
7
6
1
11
5
60
4
3
10
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

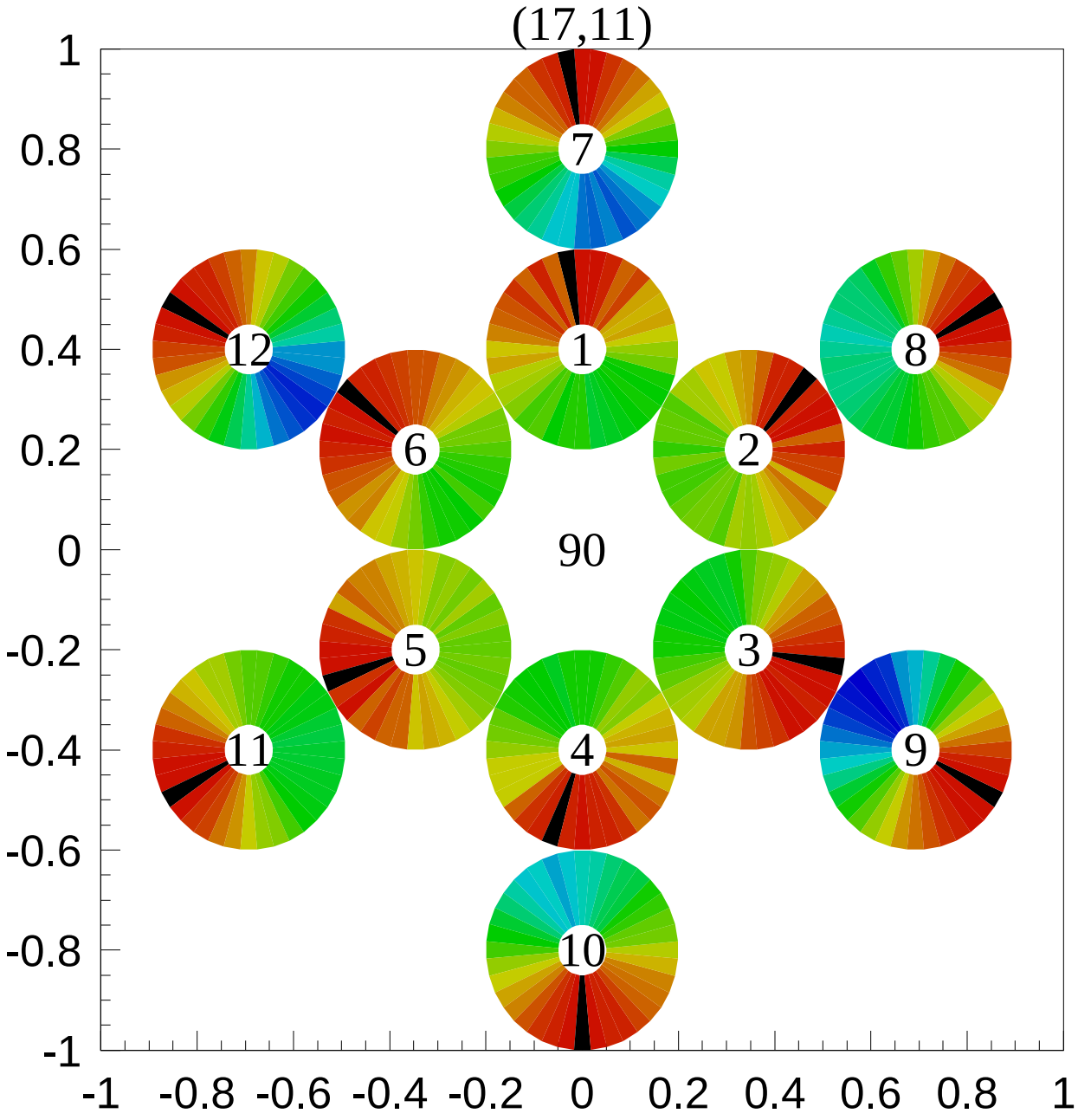

(16,56)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

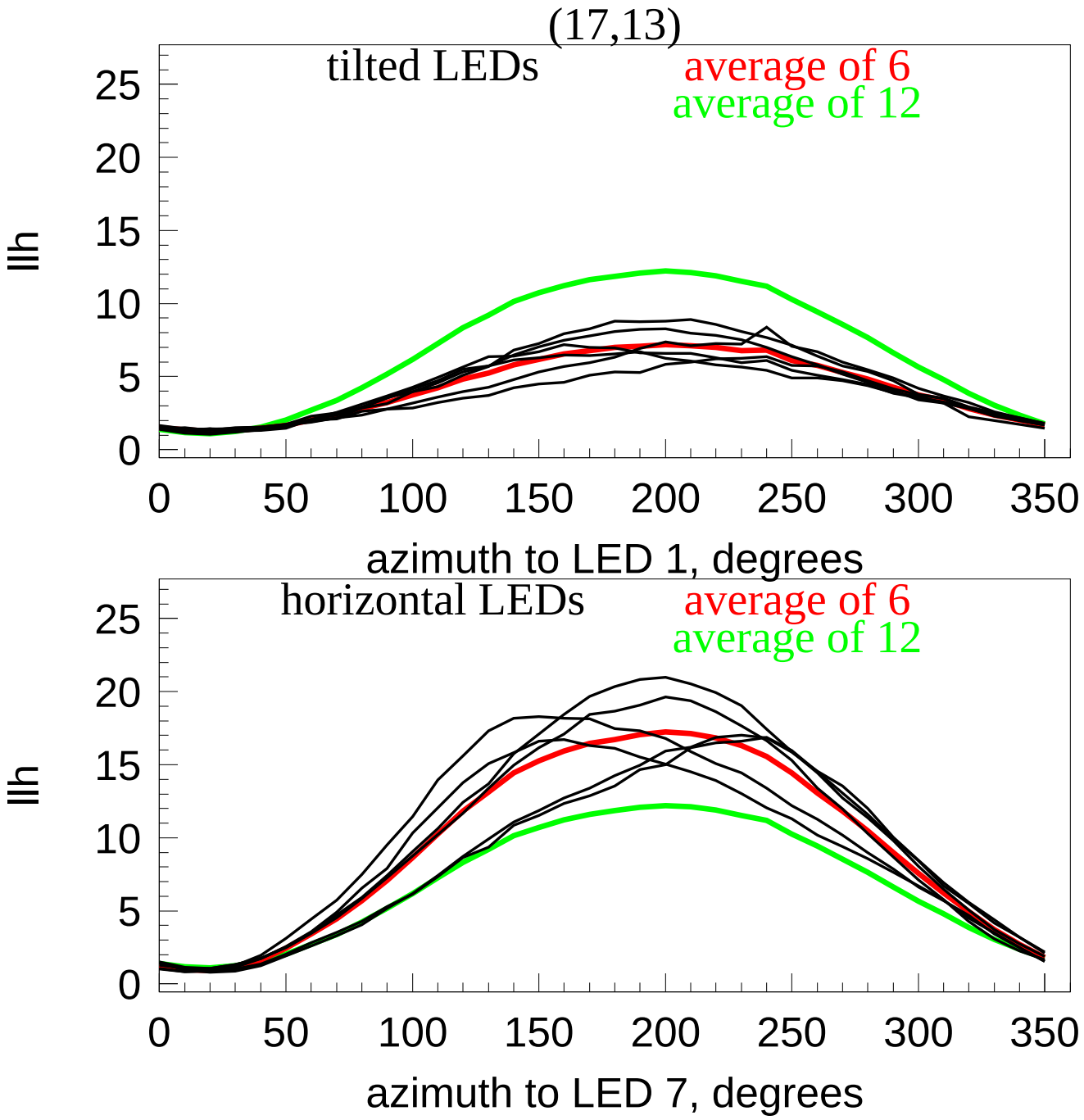

(16,56)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
260
1
7

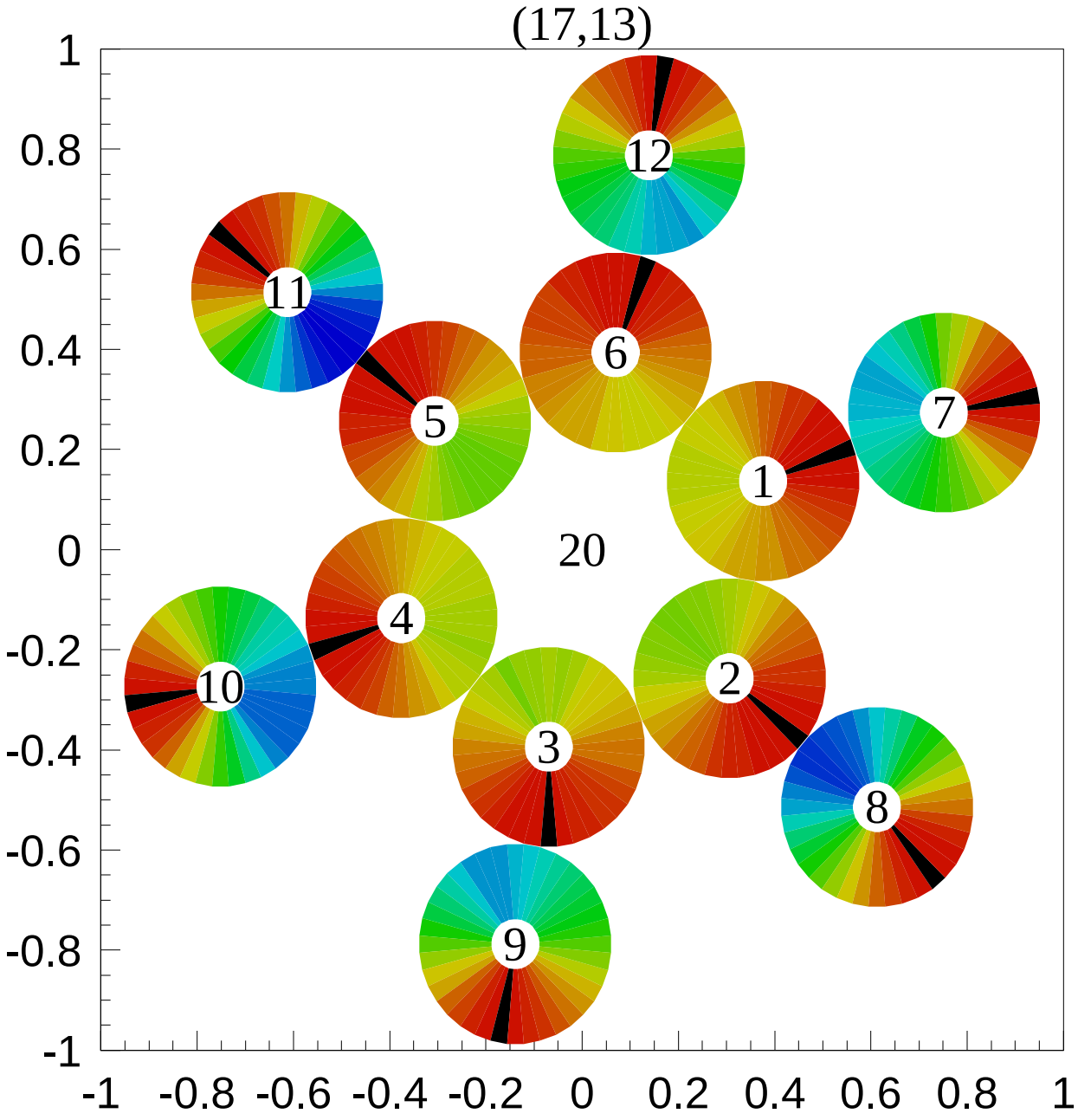

(17,1)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

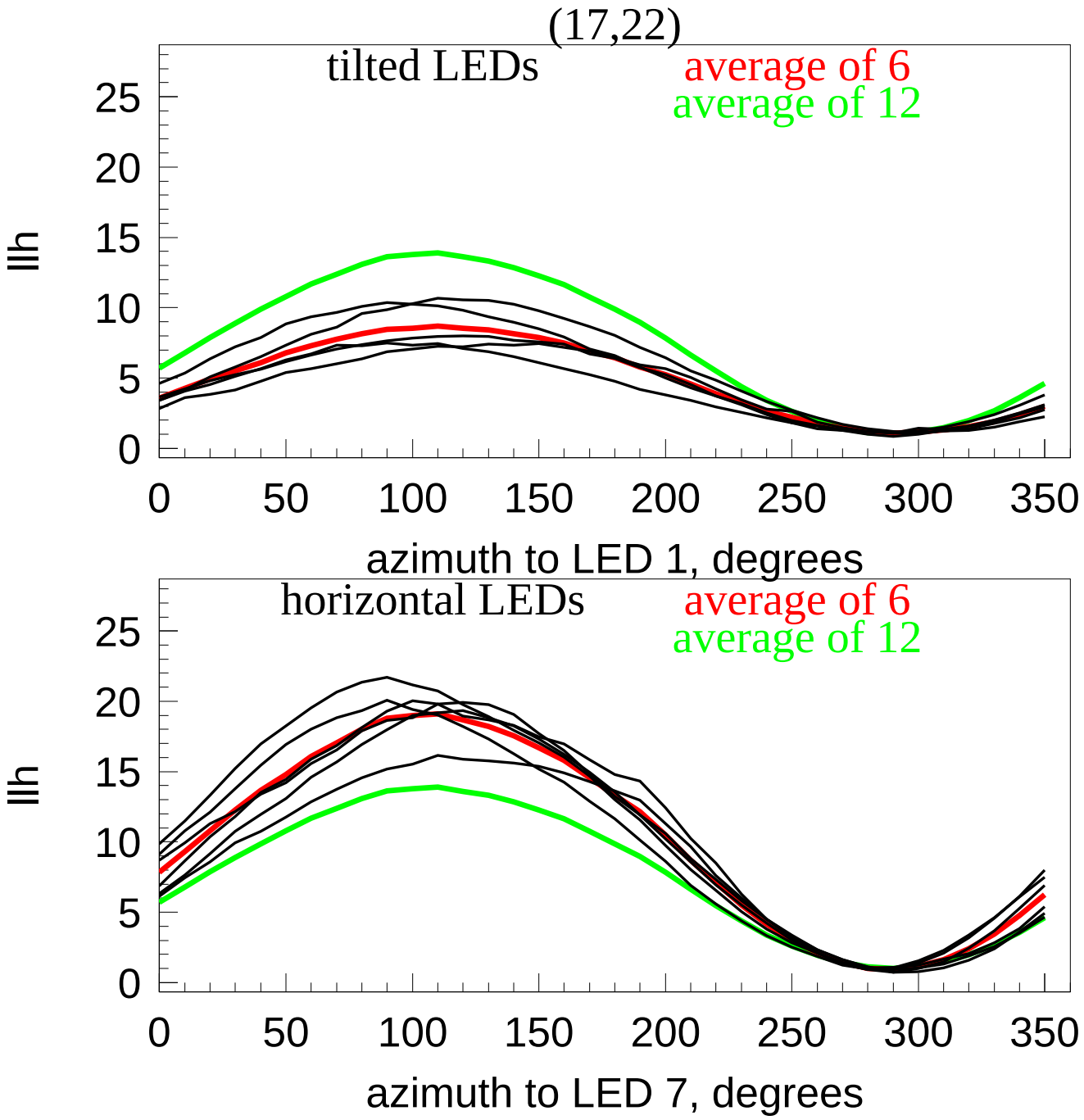

(17,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
2
12
6
110
3
9
5
4
11
10

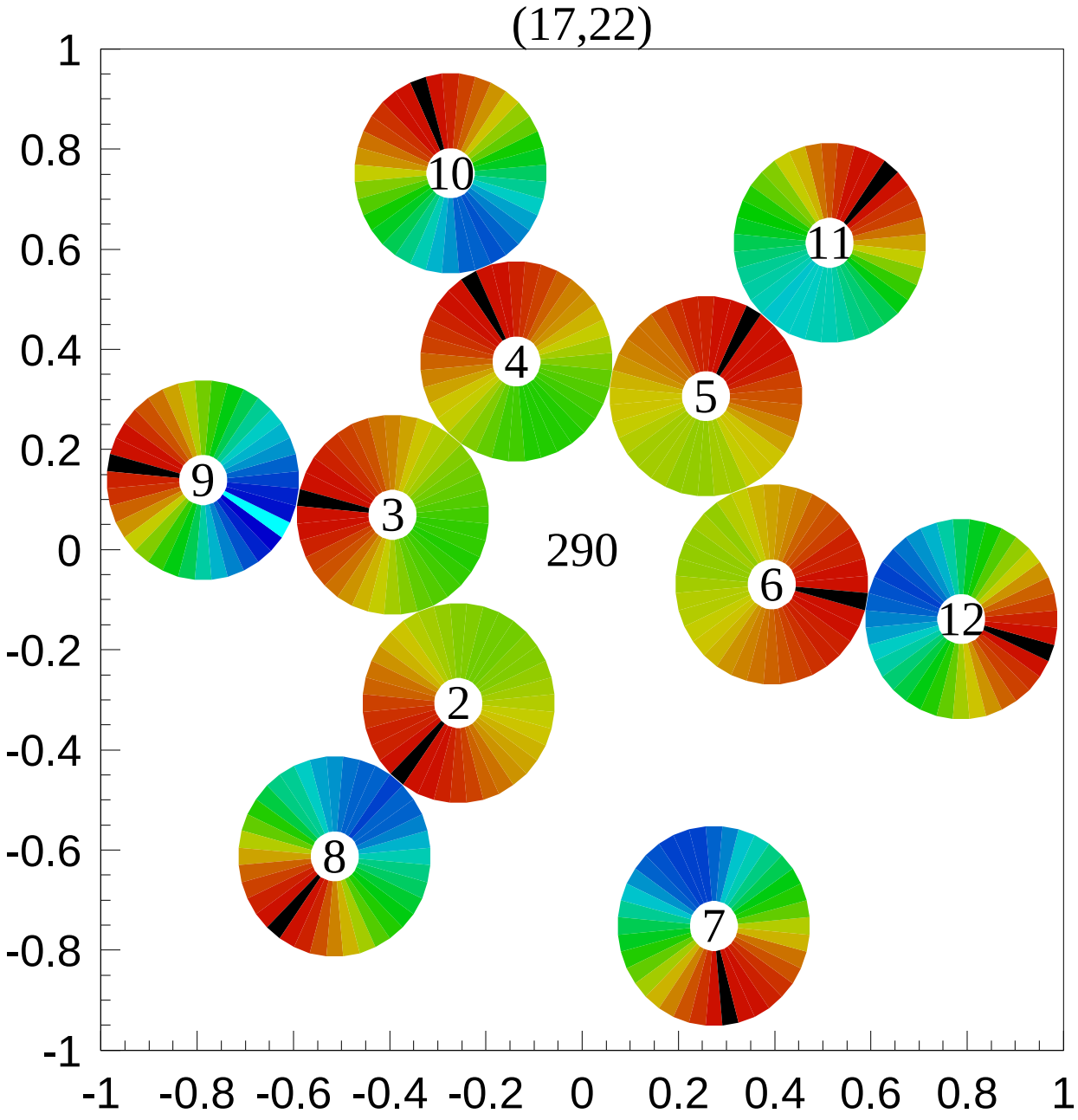

(17,11)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

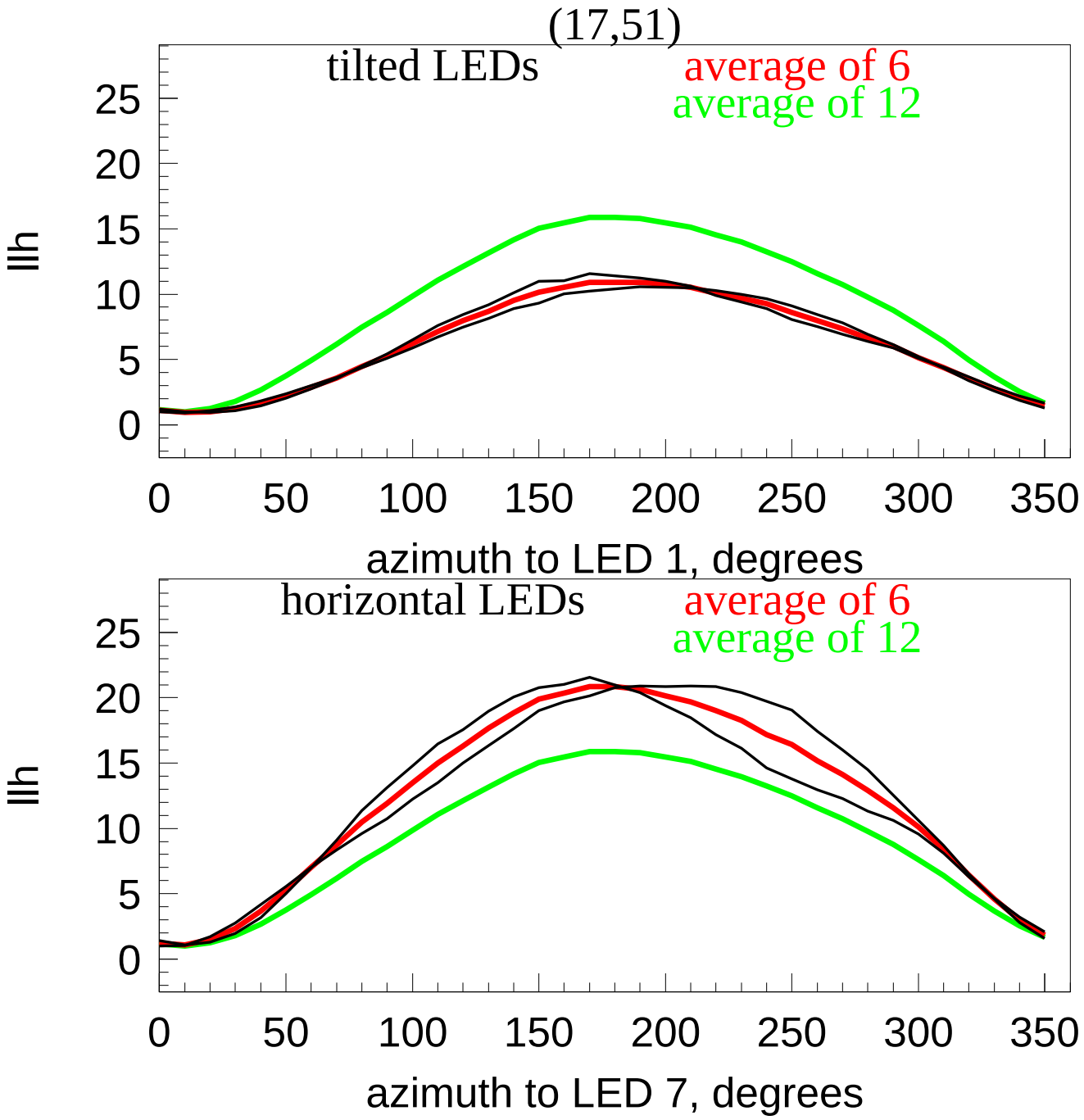

(17,11)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
12
1
8
6
2
90
5
3
11
4
9
10

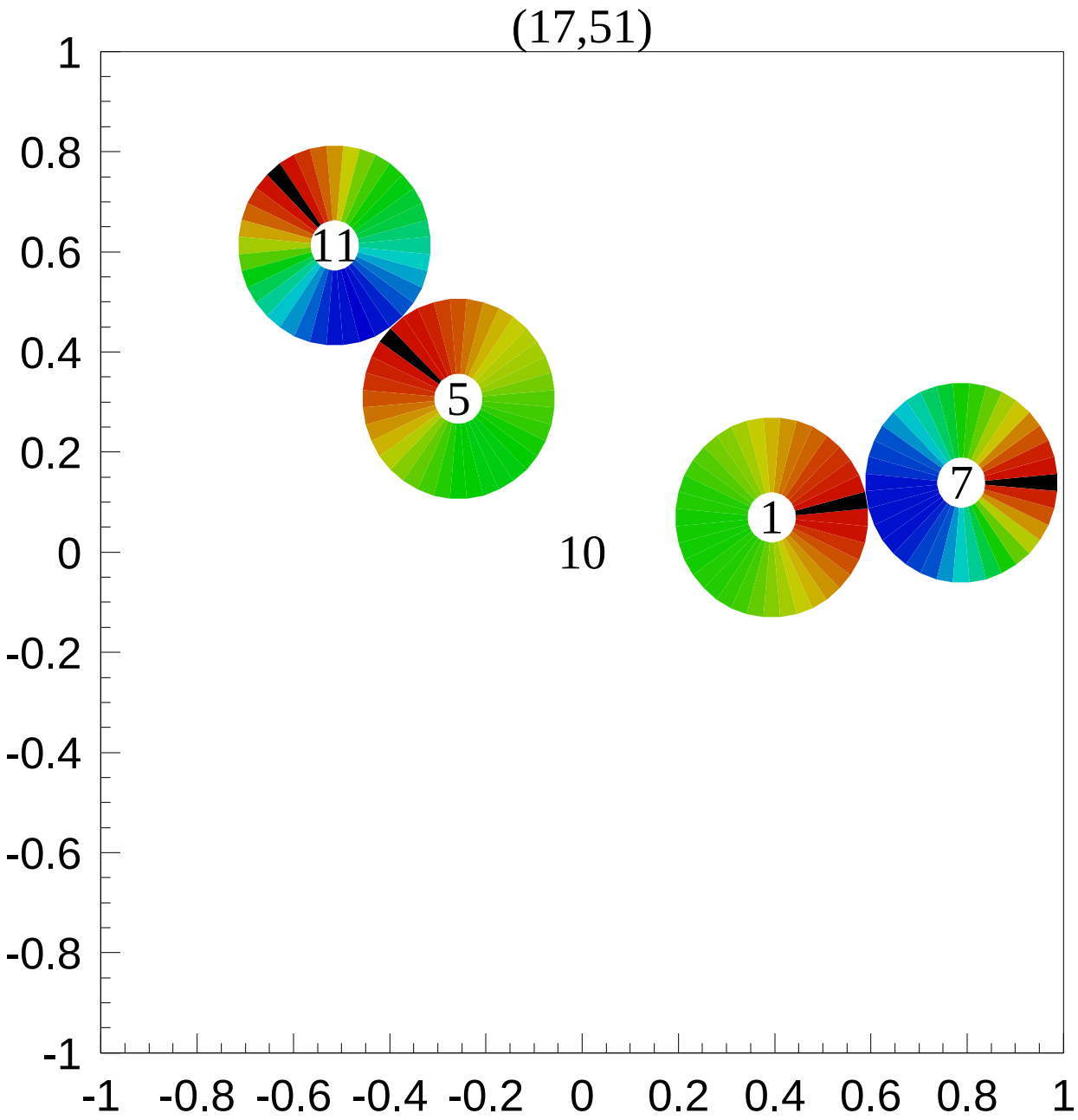

(17,13)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

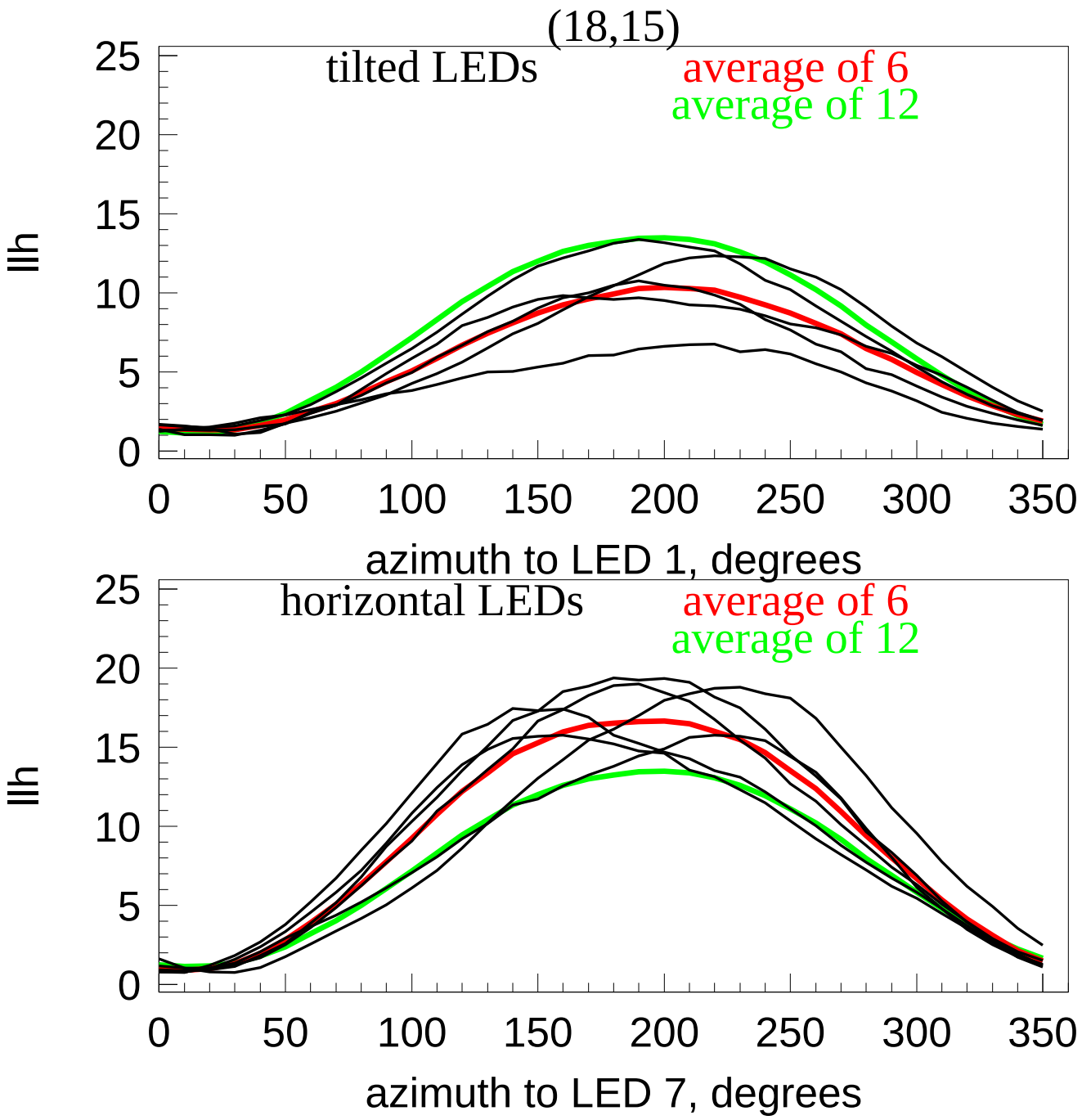

(17,13)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
11
6
5
7
1
20
4
10
2
3
8
9

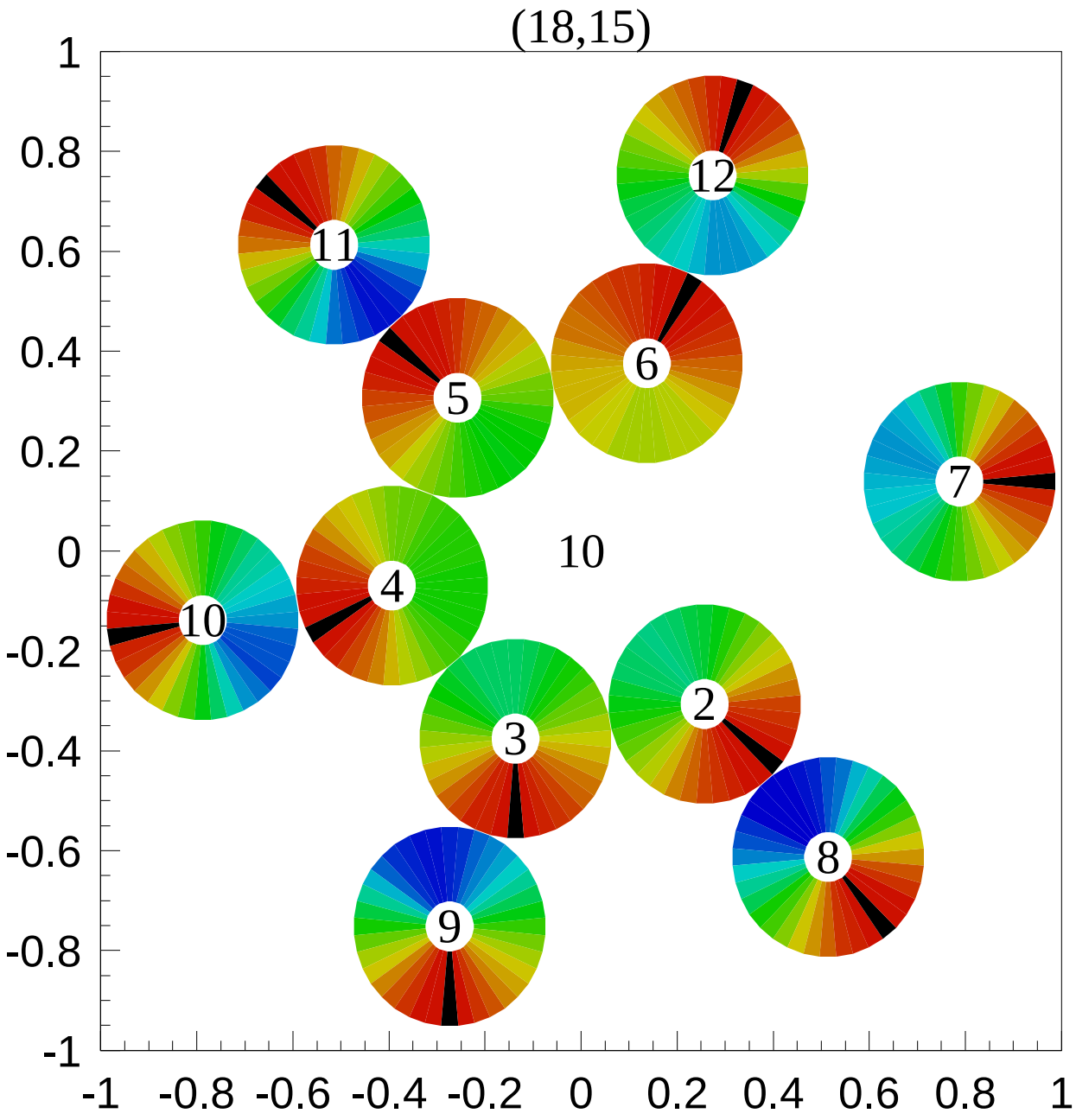

(17,22)
tilted LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

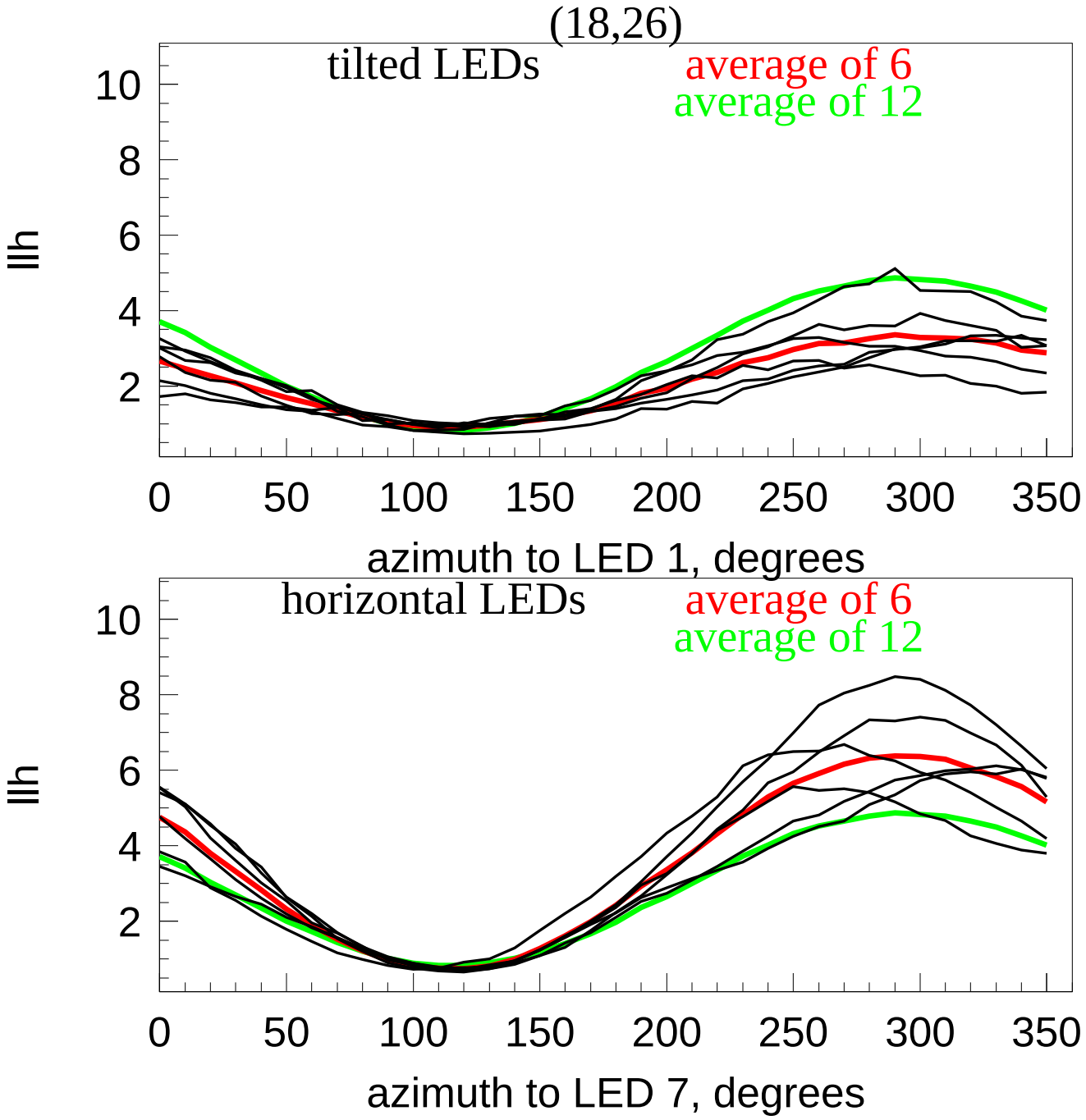

(17,22)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
11
4
5
9
3
290
6
12
2
8
7

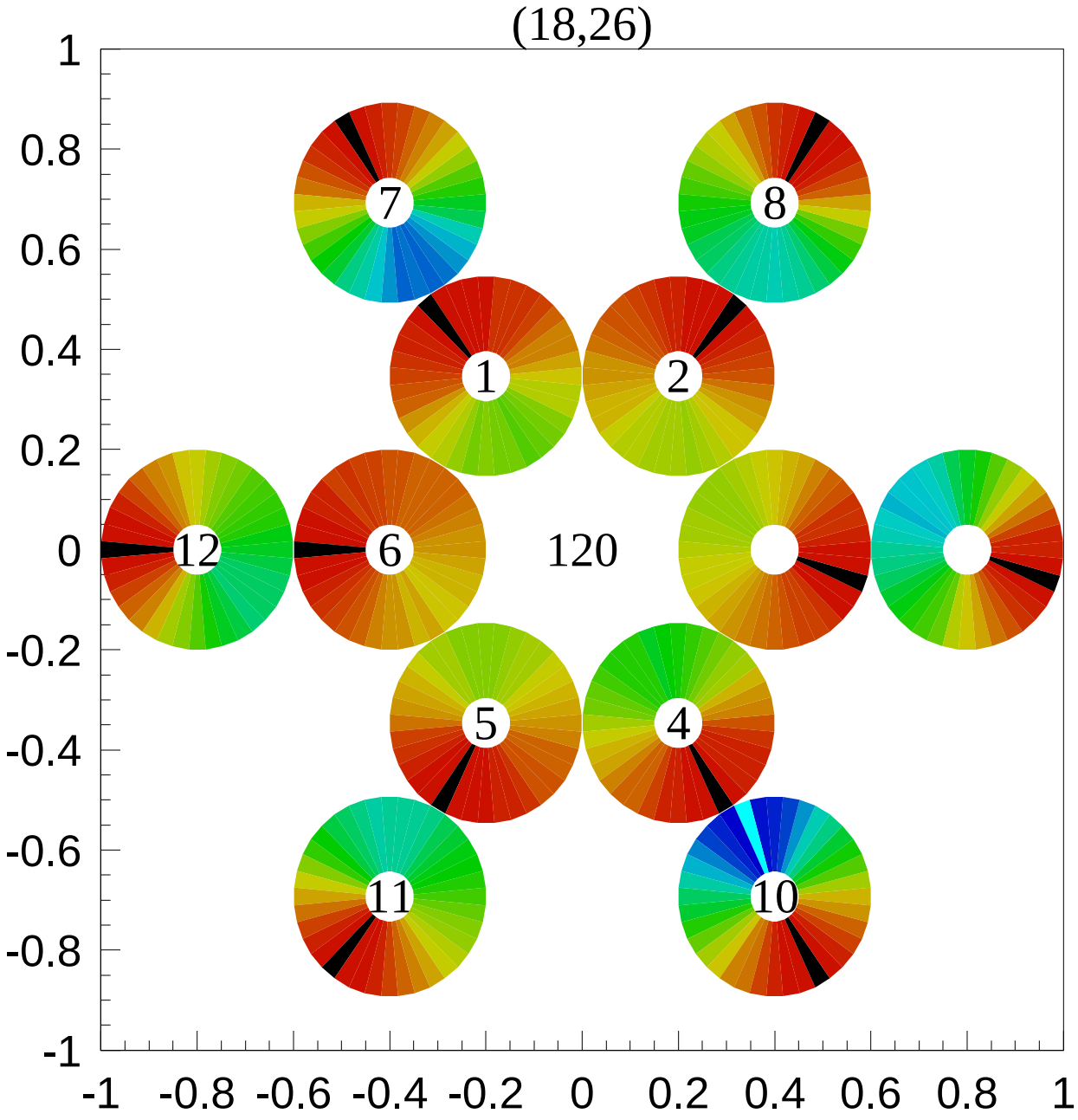

(17,51)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

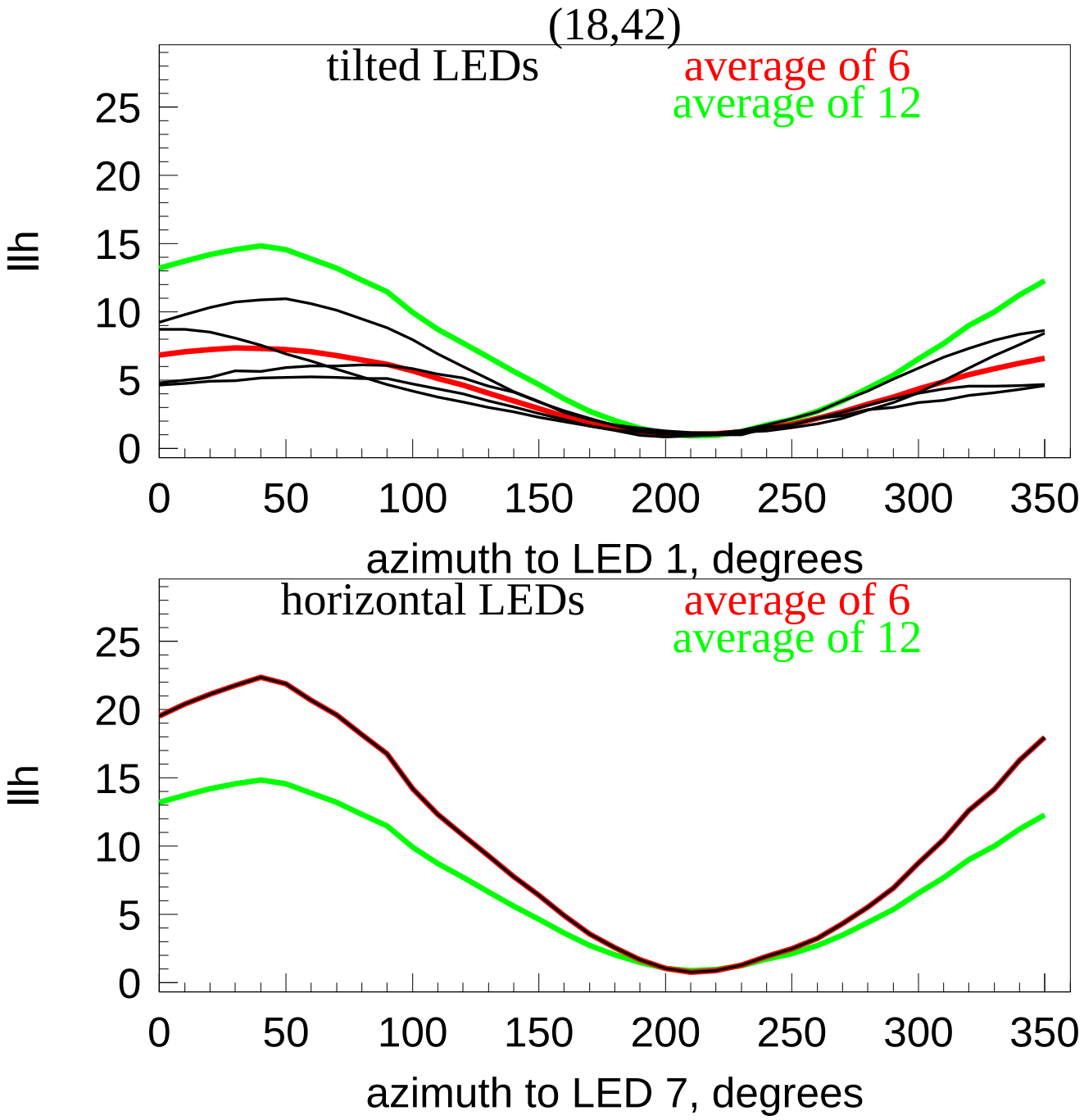

(17,51)
11
5
10
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

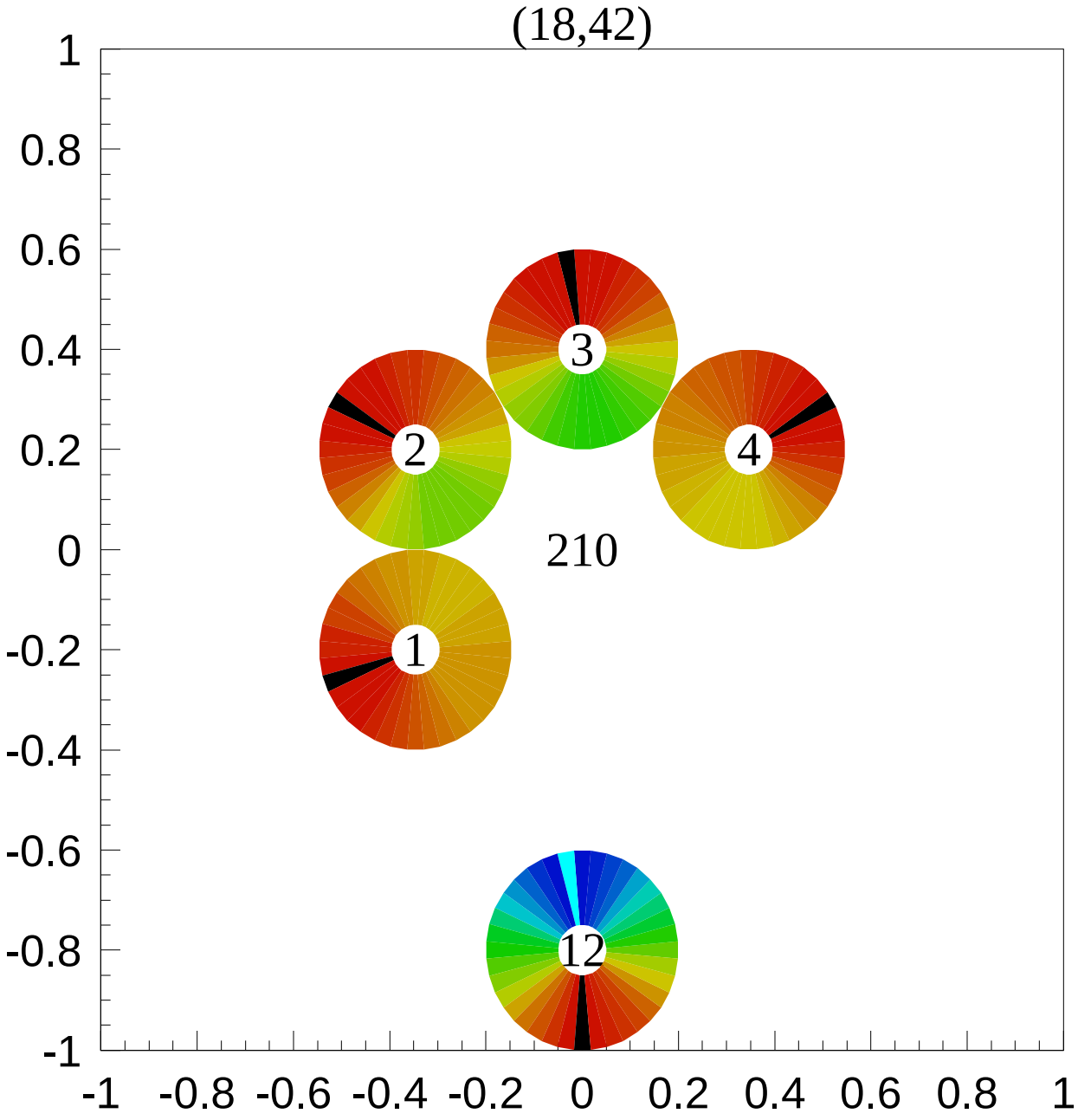

(18,15)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

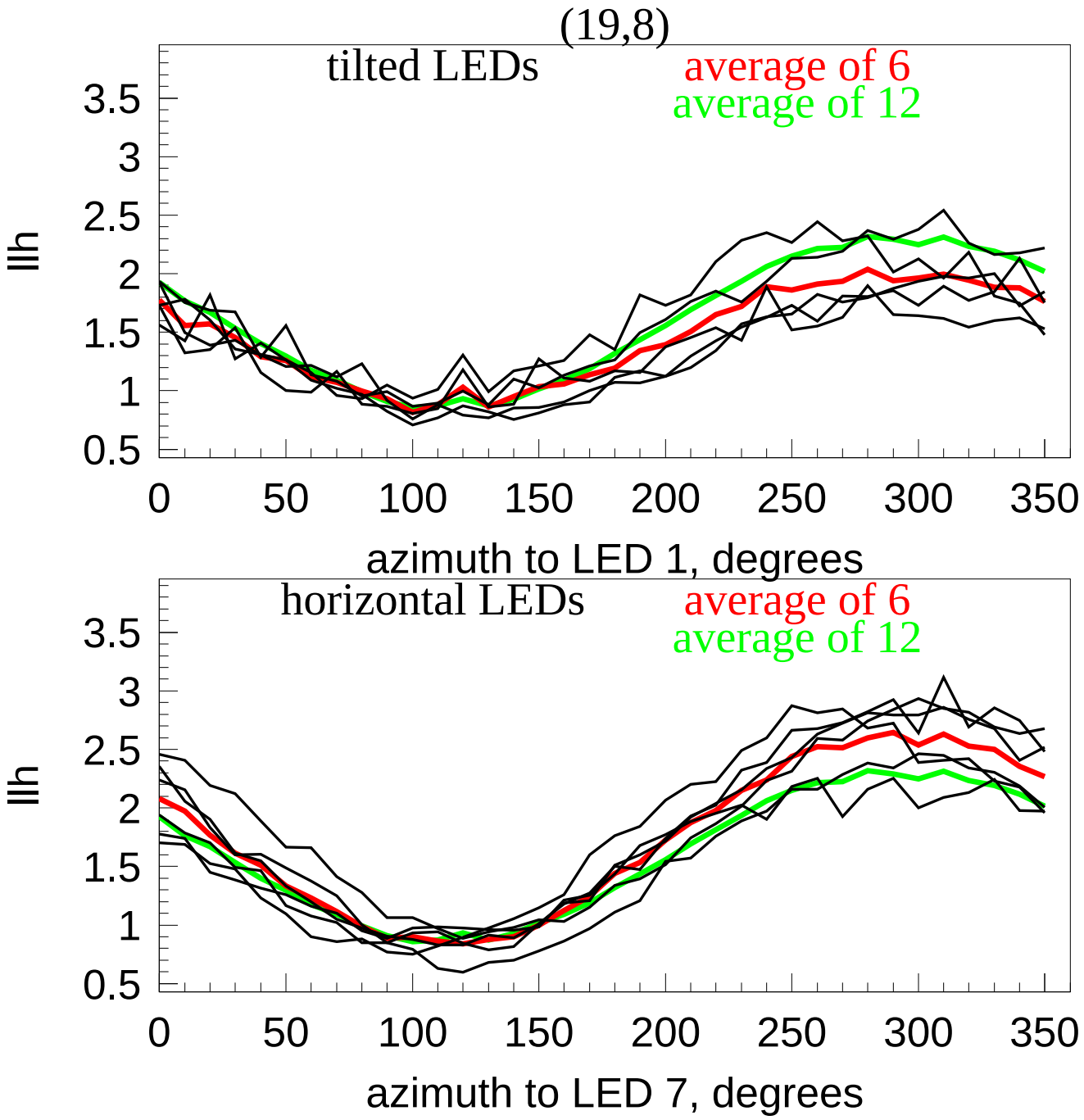

(18,15)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
11
6
5
7
10
4
10
2
3
8
9

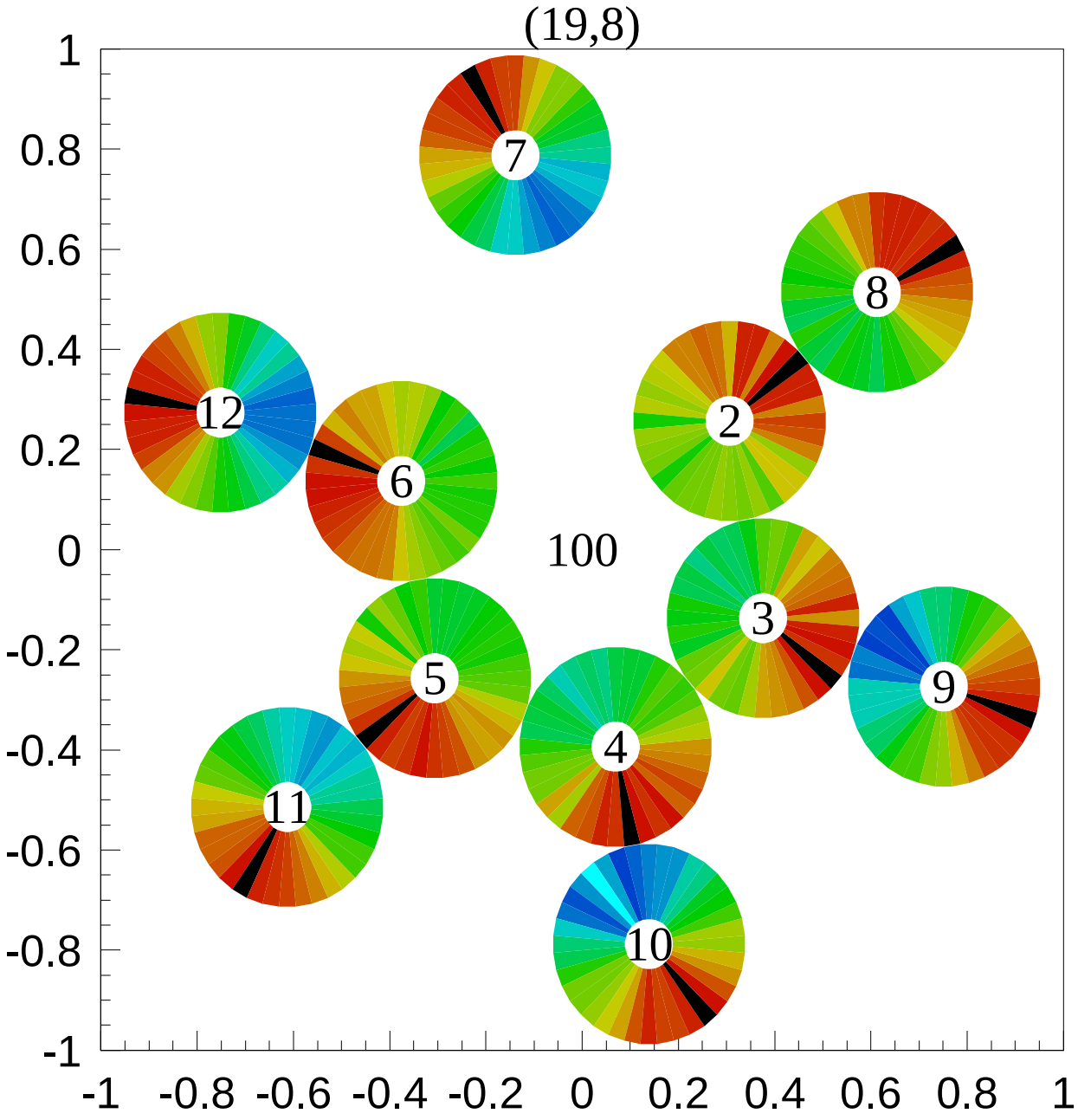

(18,26)
tilted LEDs
average of 6
average of 12
Ilh
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

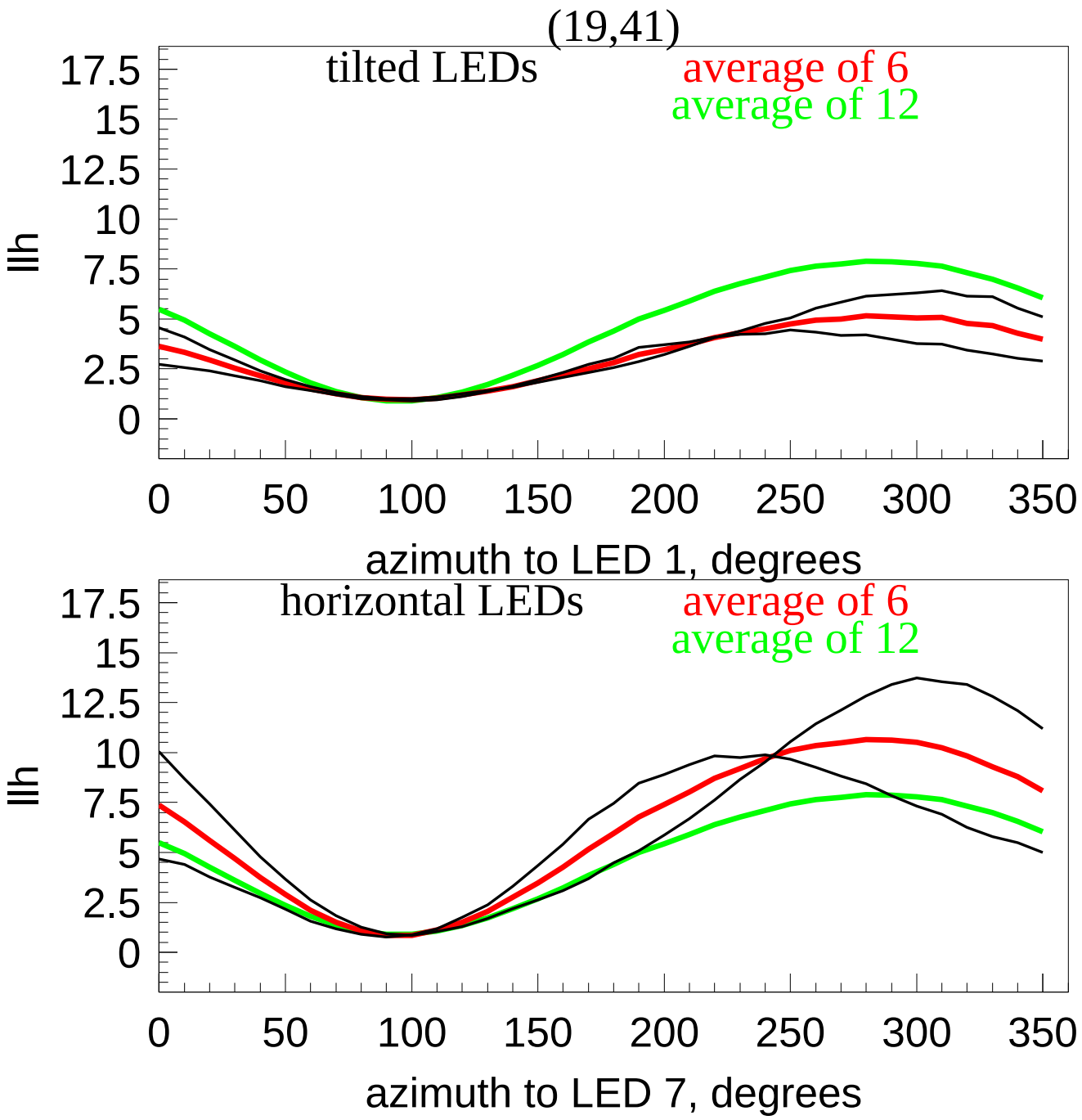

(18,26)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
1
2
12
6
120
5
4
11
10

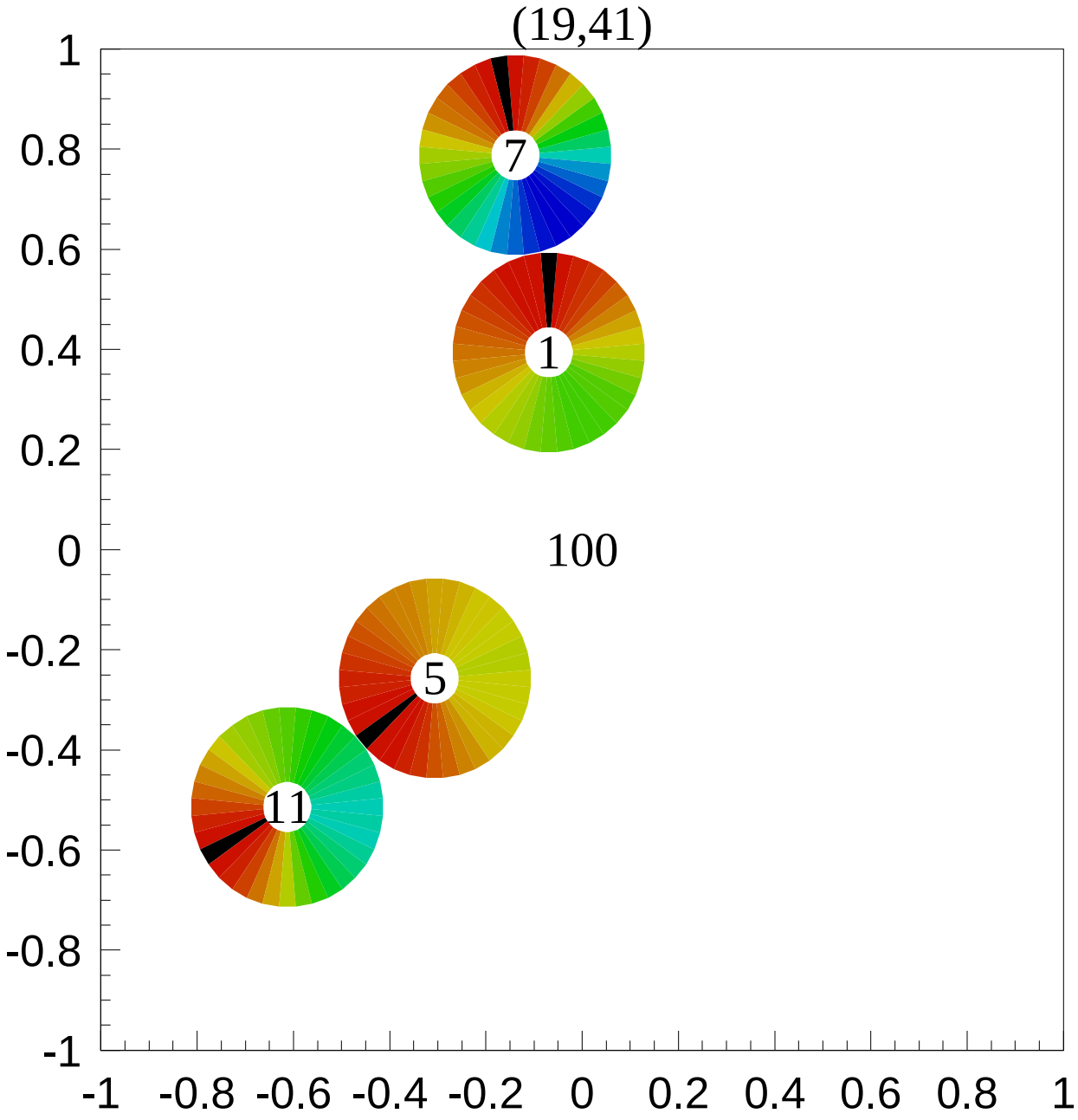

(18,42)
tilted LEDs
average of 6
average of 12
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

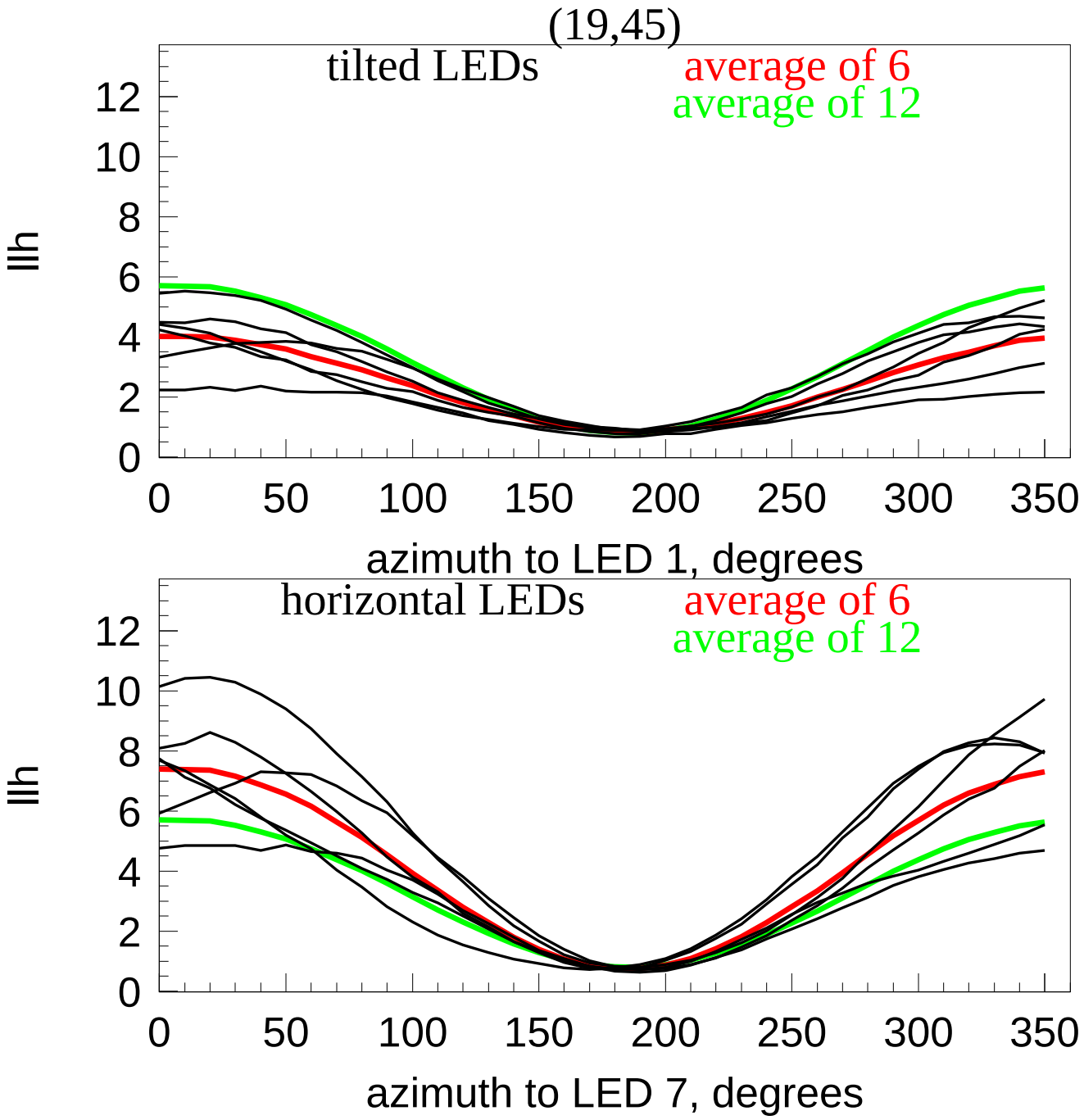

(18,42)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
3
2
4
210
1
12

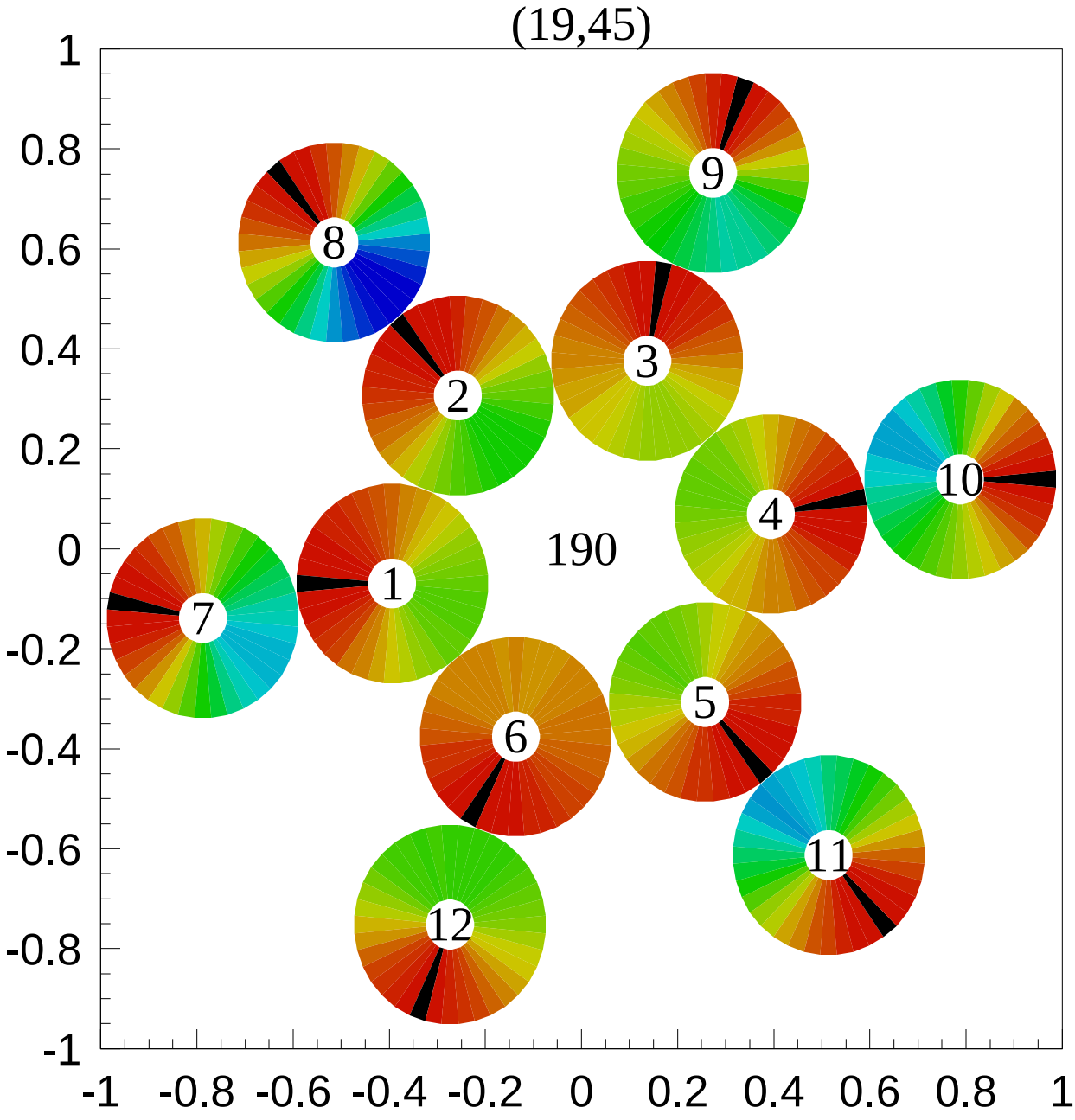

(19,8)
tilted LEDs
average of 6
average of 12
Ilh
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

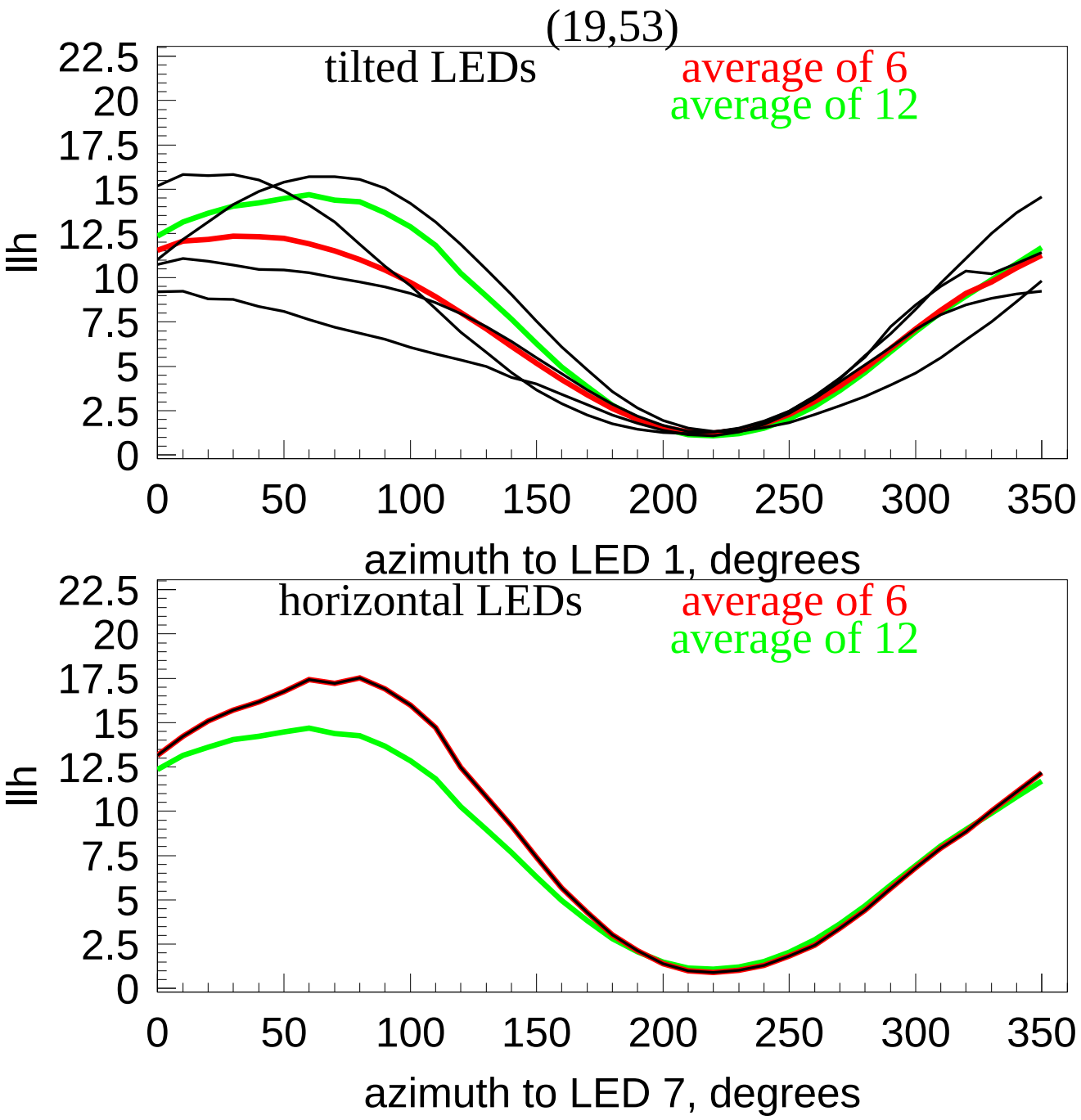

(19,8)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
12
2
6
100
3
5
9
4
11
10

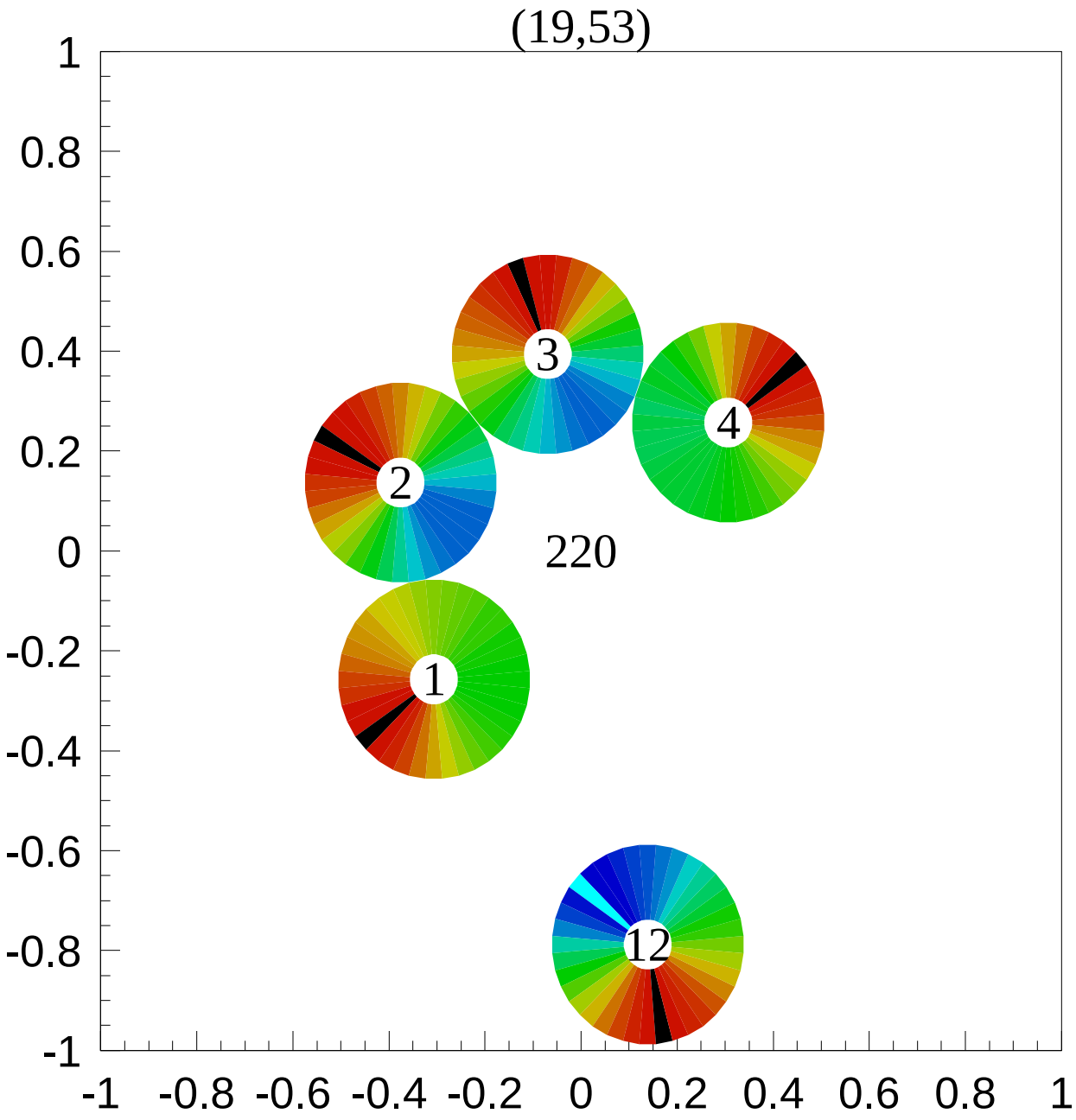

(19,41)
tilted LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

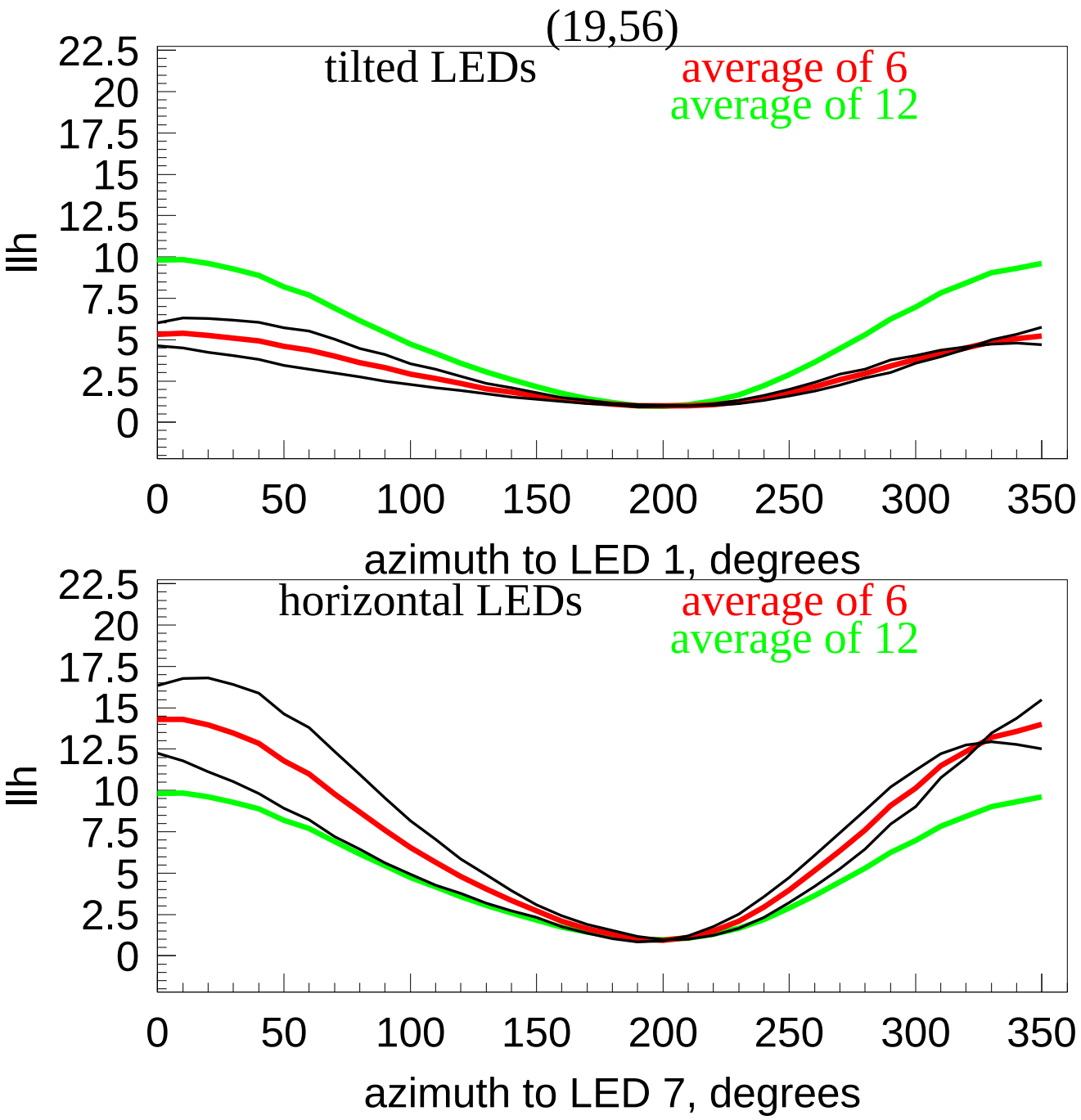

(19,41)
7
1
100
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

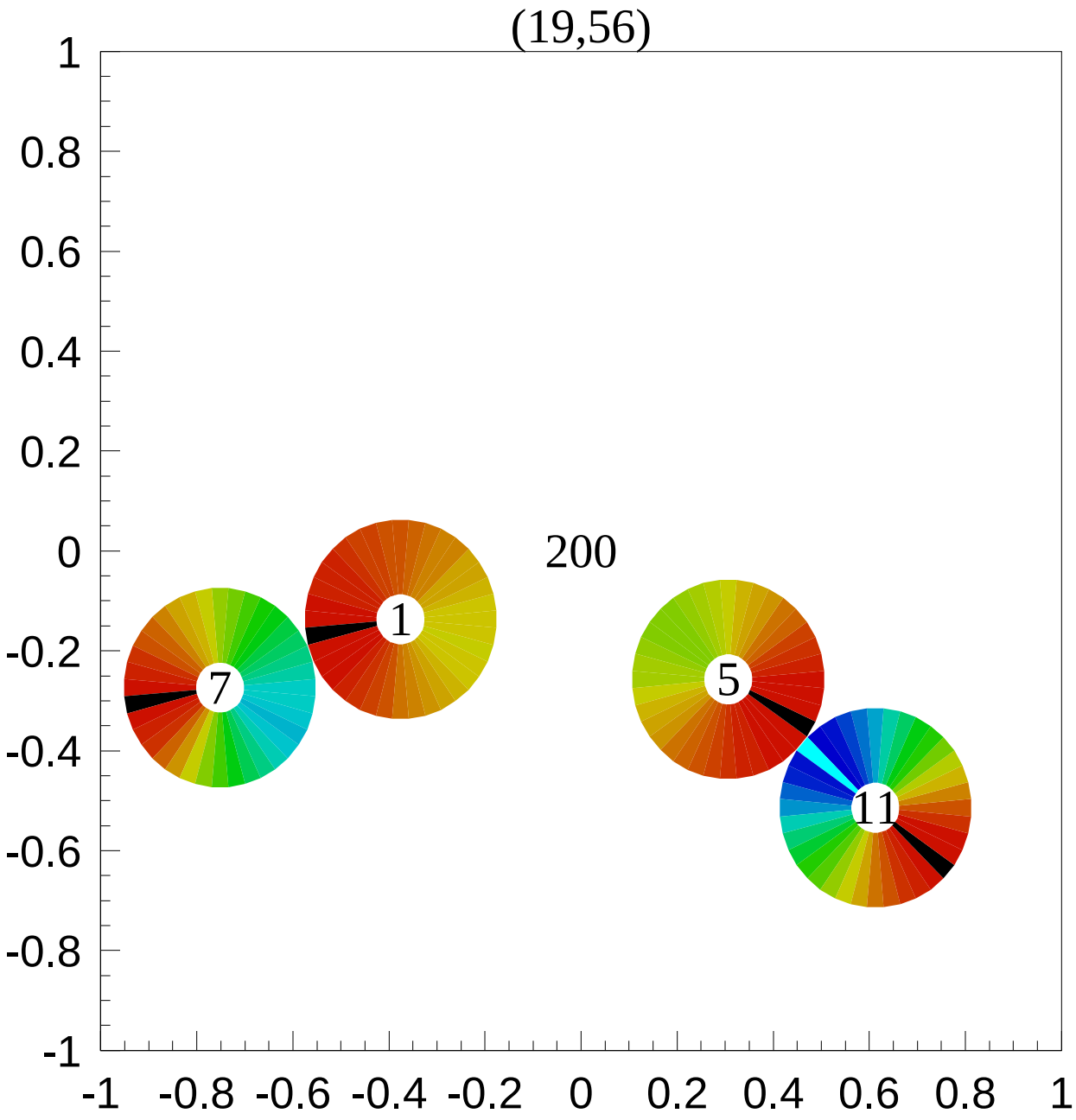

(19,45)
tilted LEDs
average of 6
average of 12
Ilh
0
2
4
6
8
10
12
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
0
2
4
6
8
10
12
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

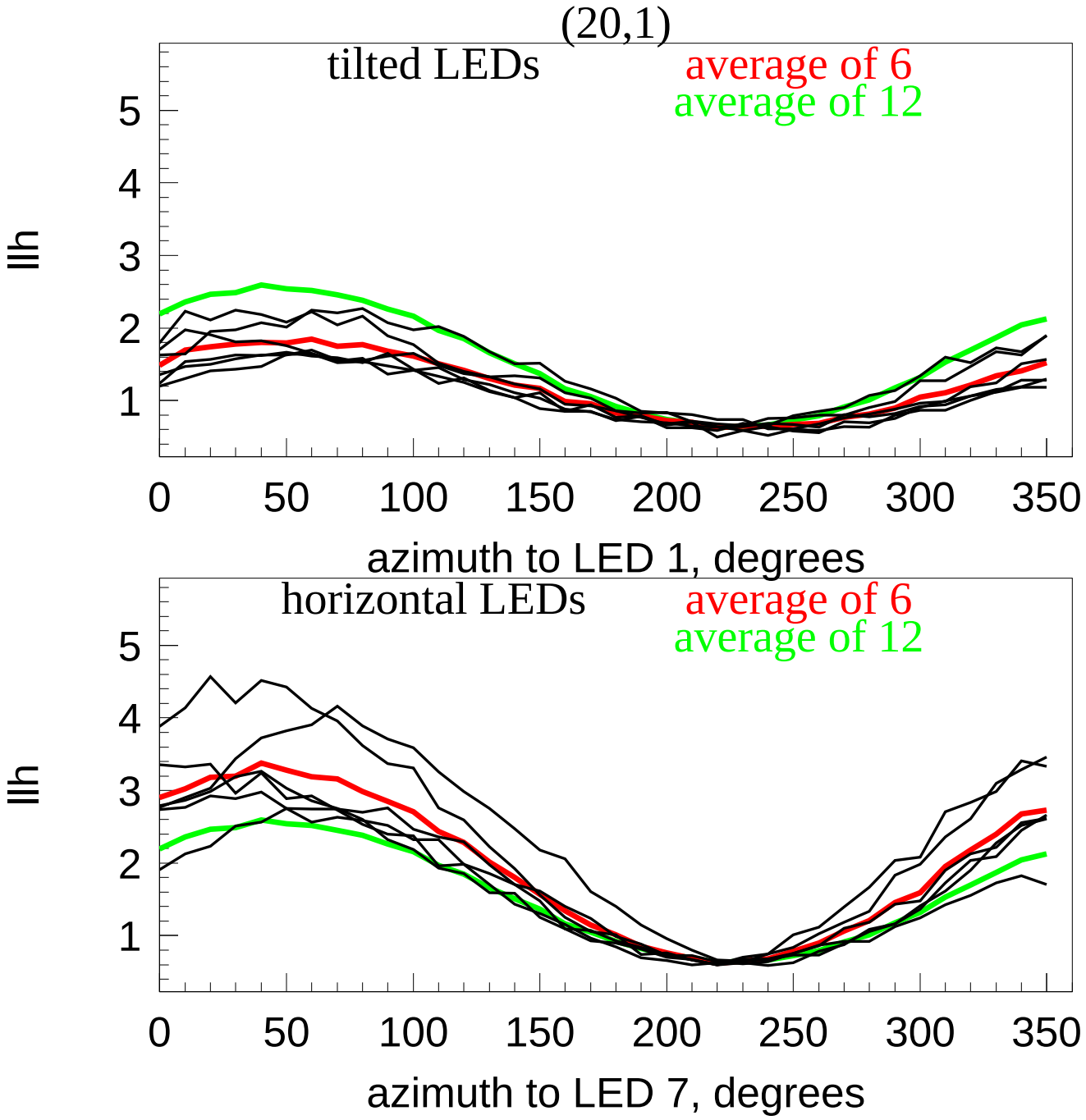

(19,45)
190
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

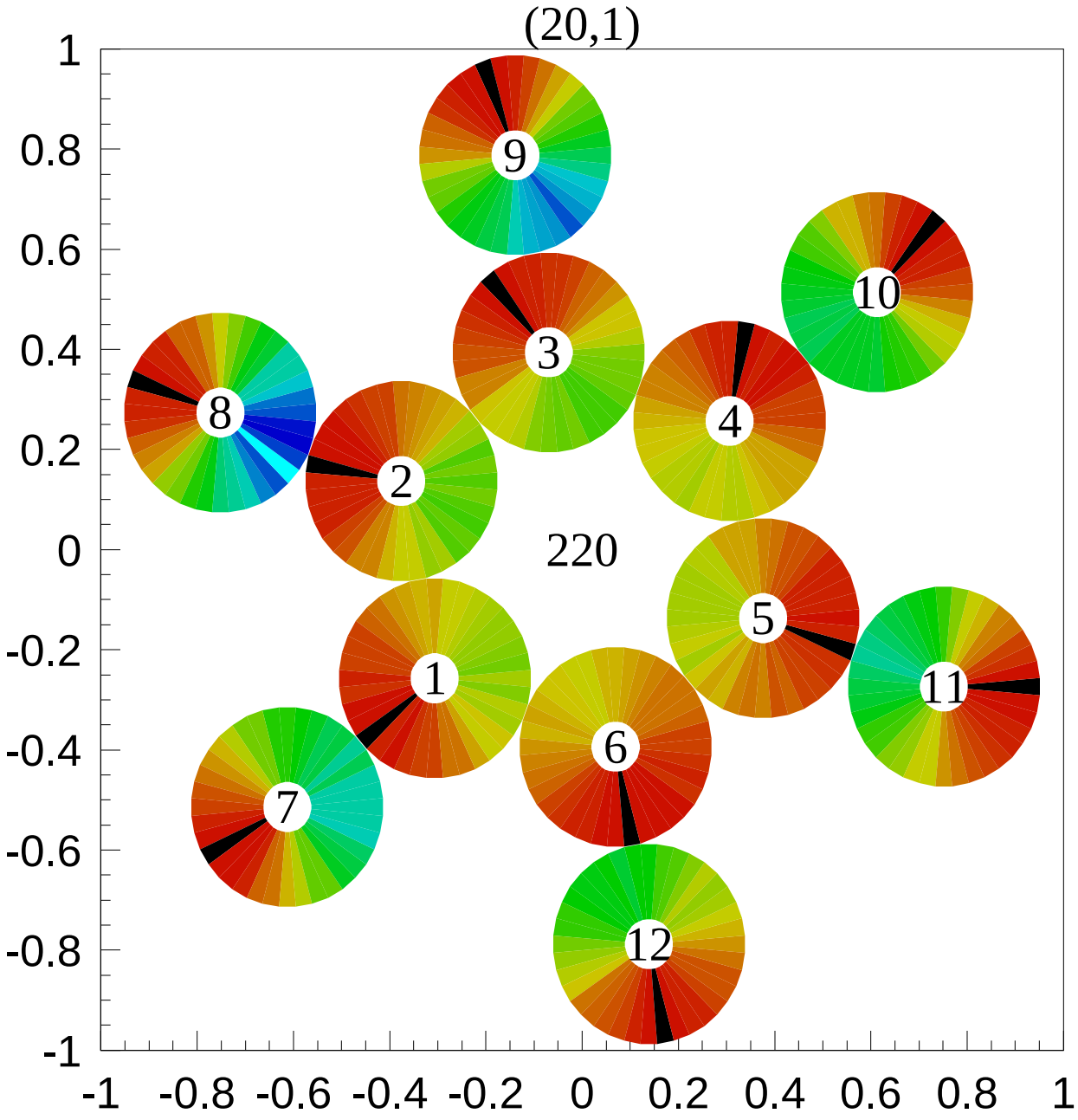

(19,53)
tilted LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

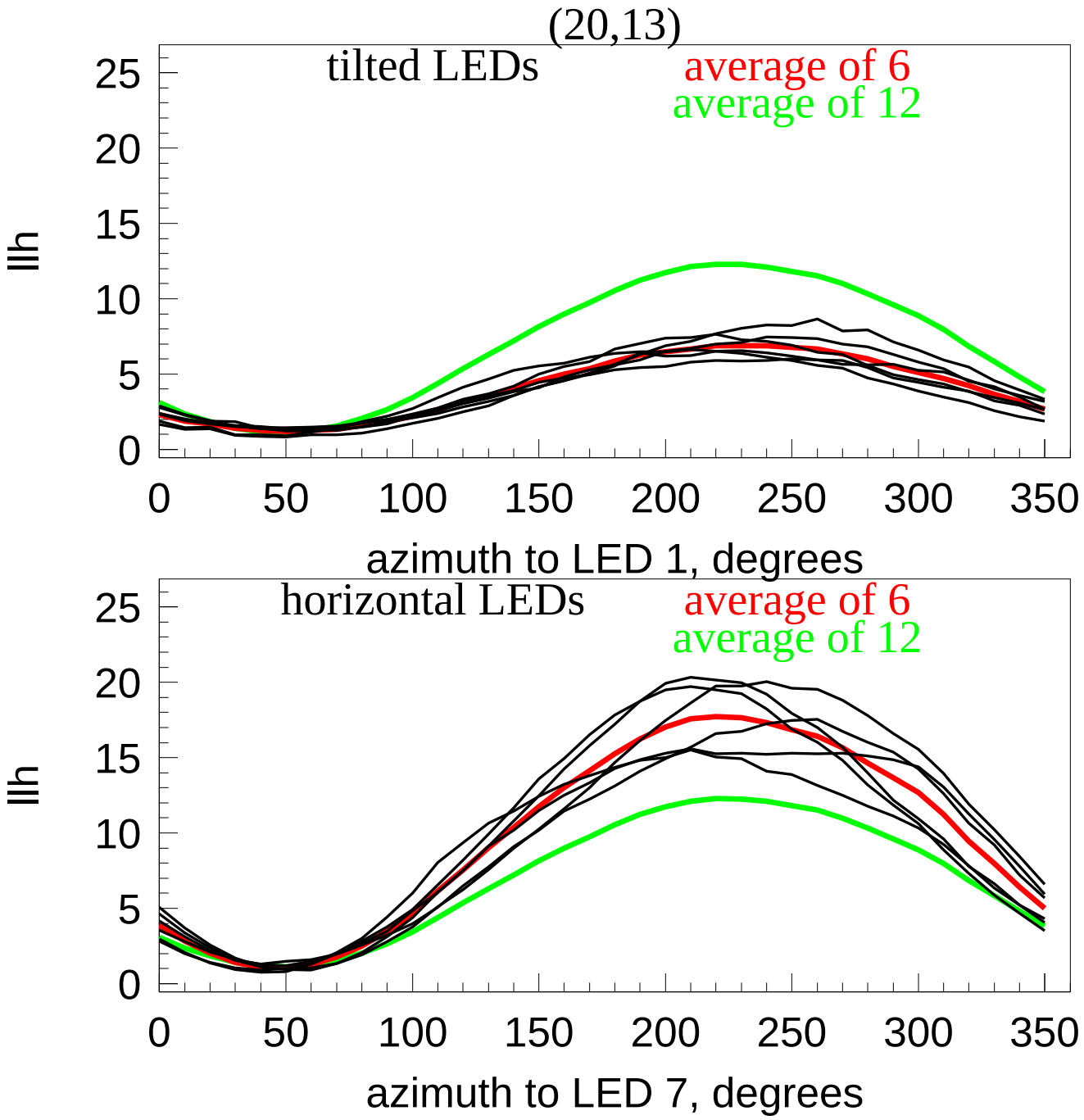

(19,53)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
3
4
2
220
1
12

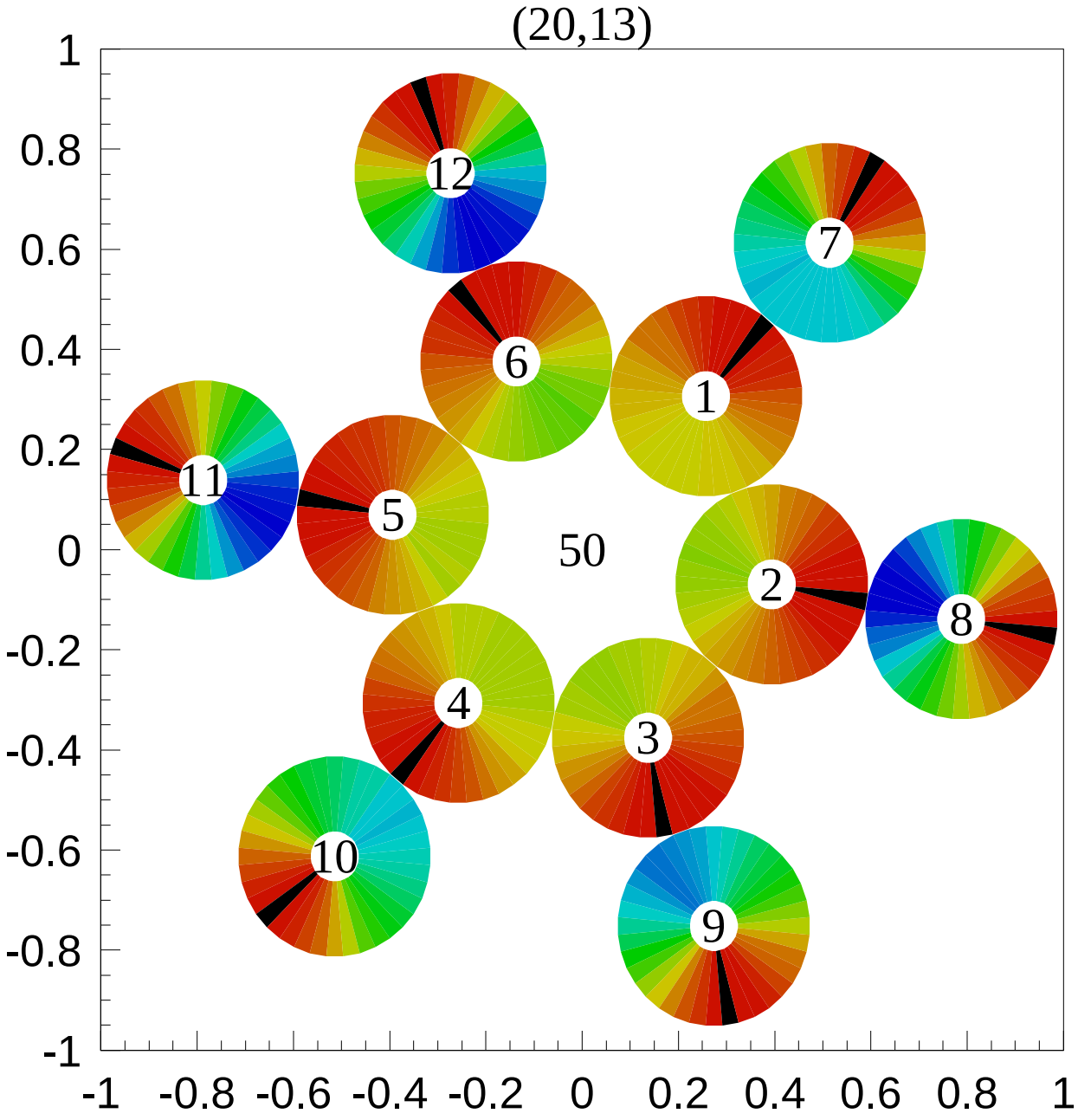

(19,56)
tilted LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

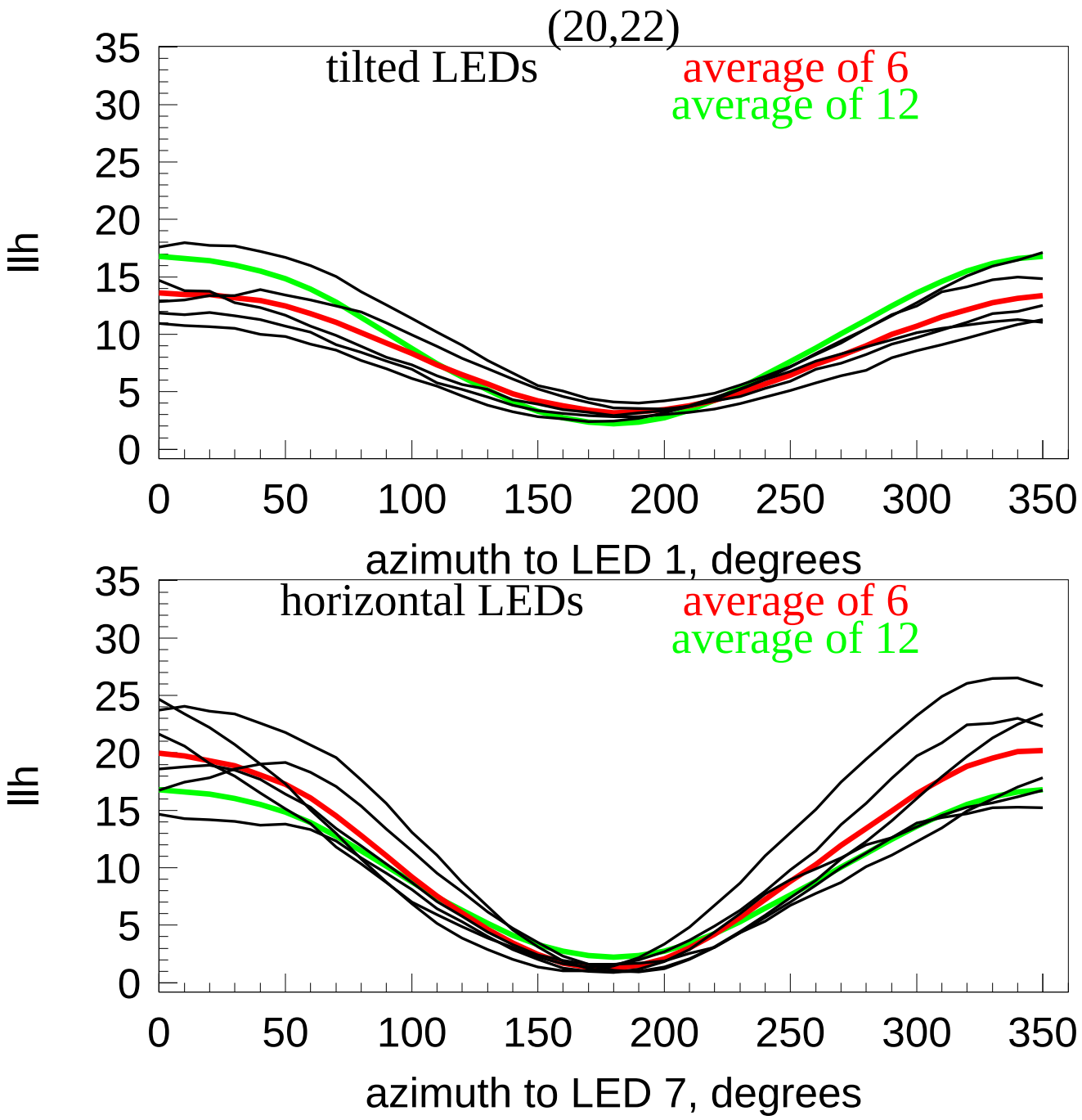

(19,56)
200
1
7
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

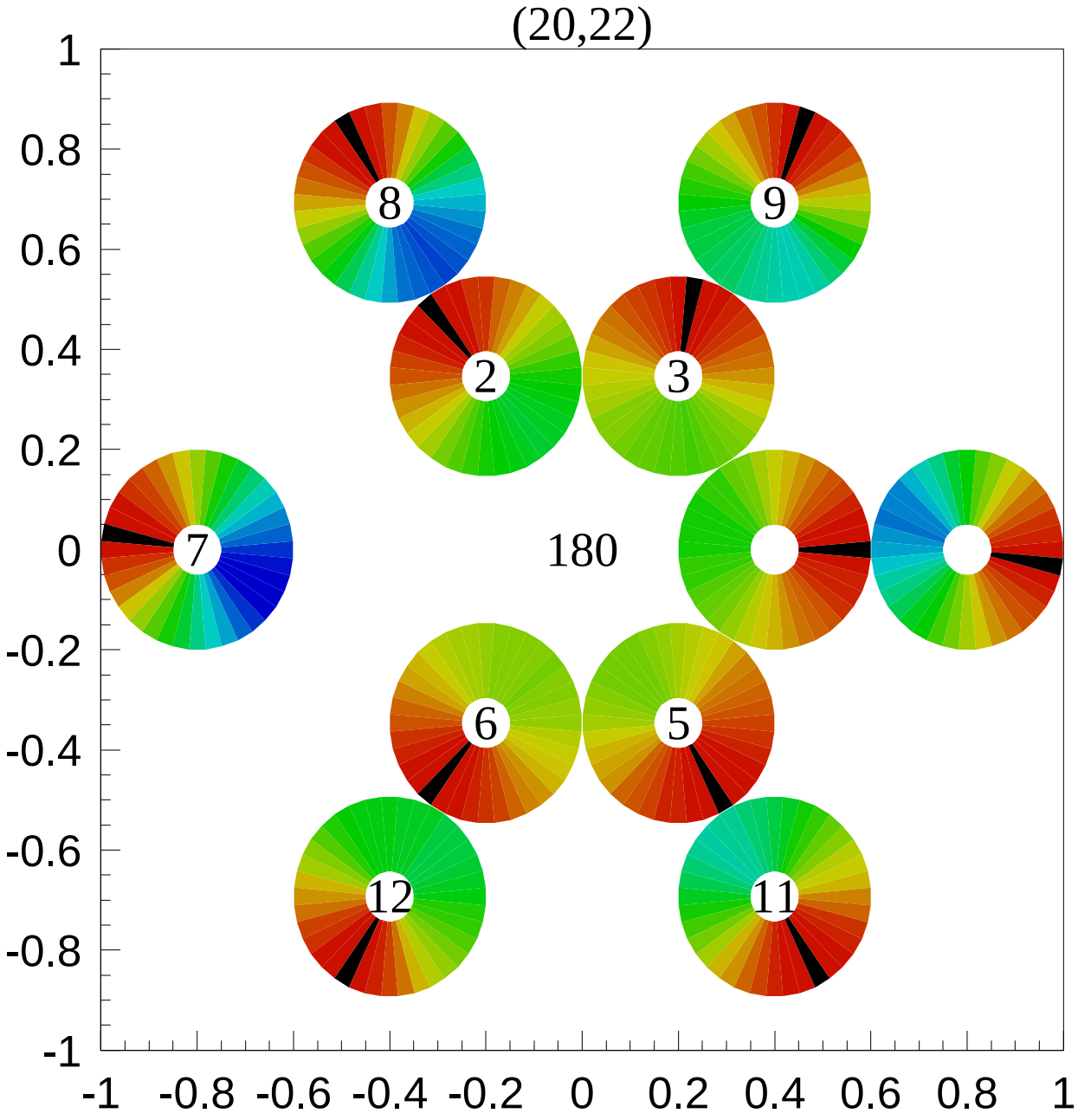

(20,1)
tilted LEDs
average of 6
average of 12
Ilh
1
2
3
4
5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
1
2
3
4
5
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

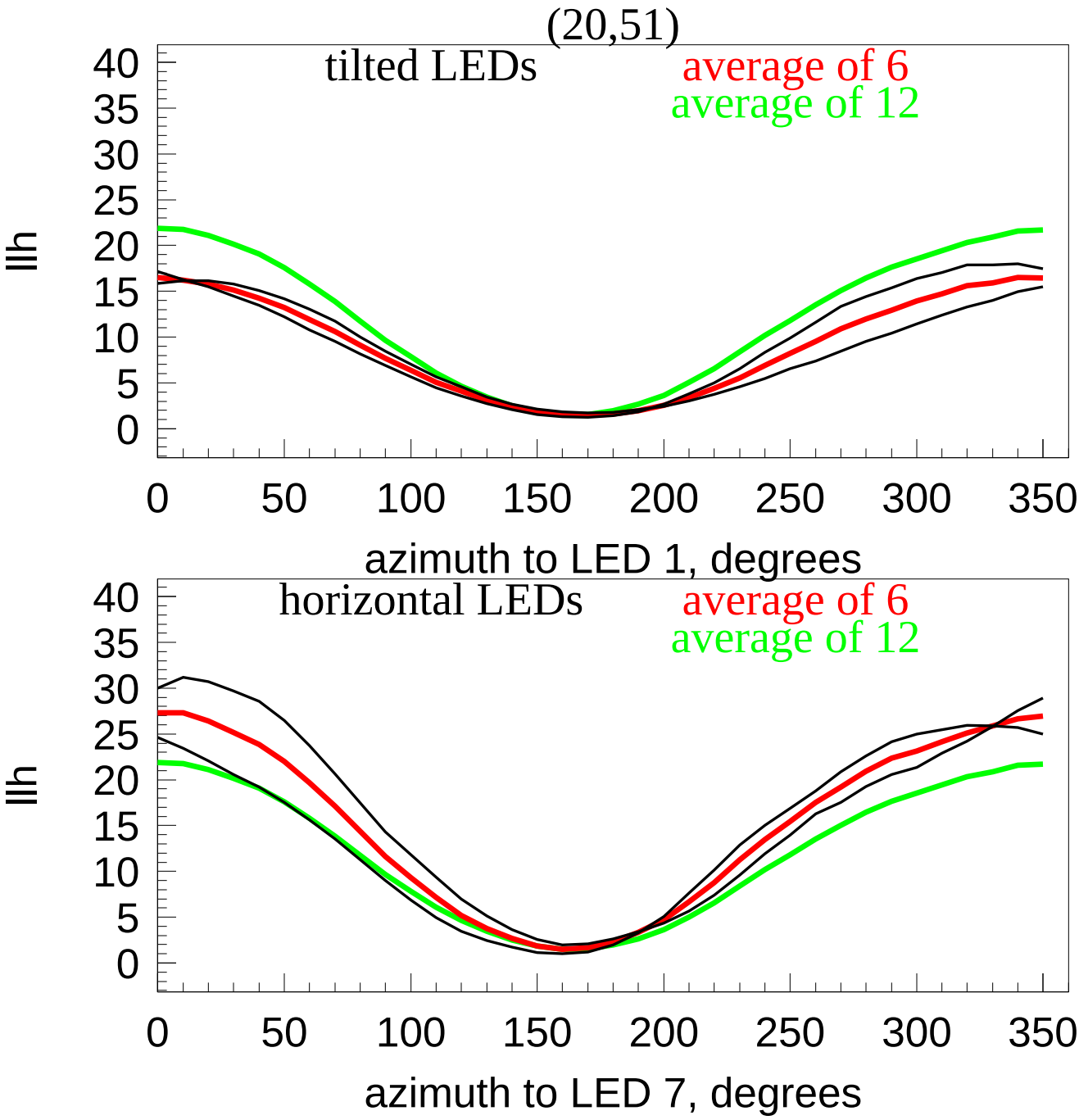

(20,1)
220
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

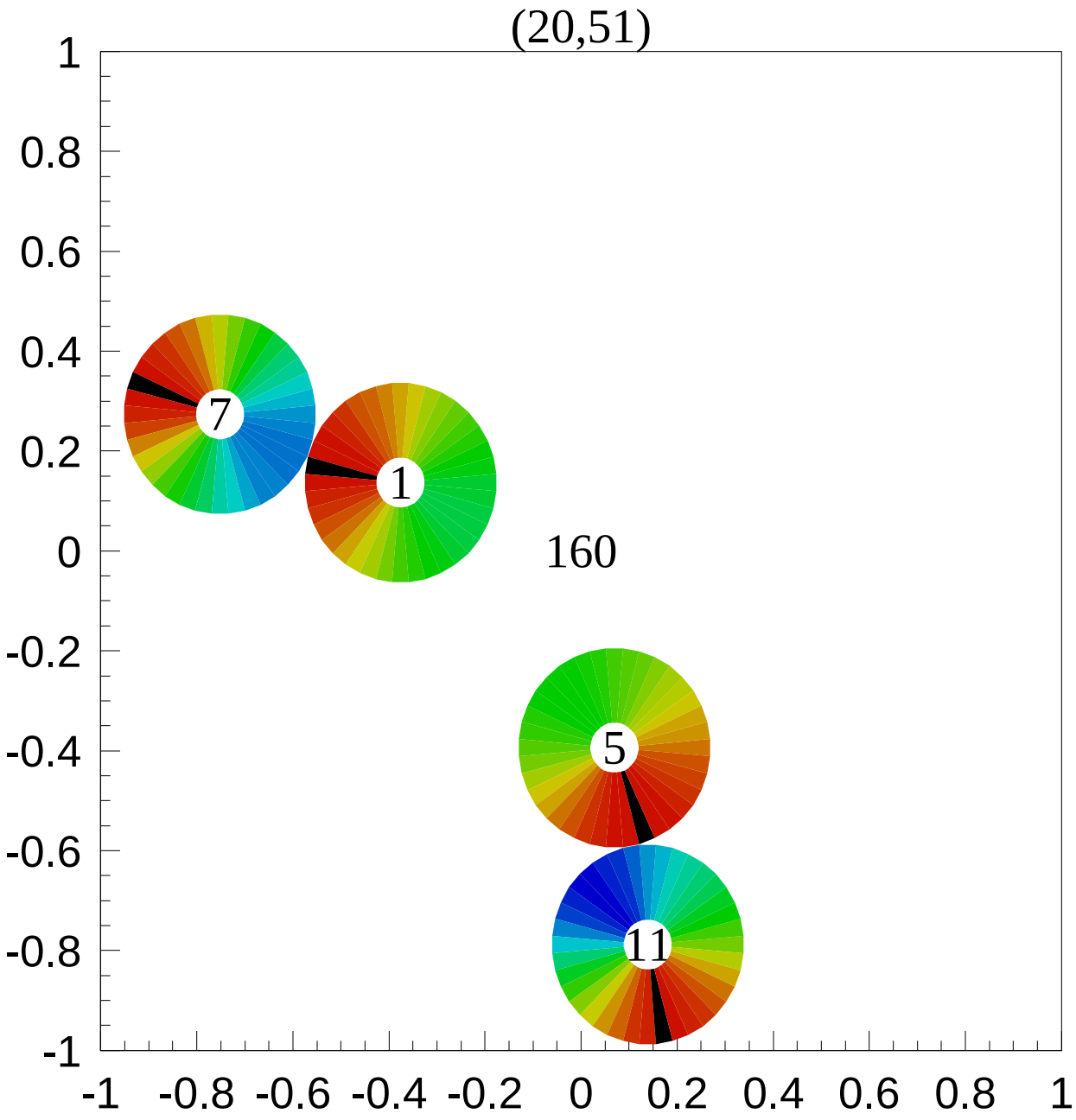

(20,13)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

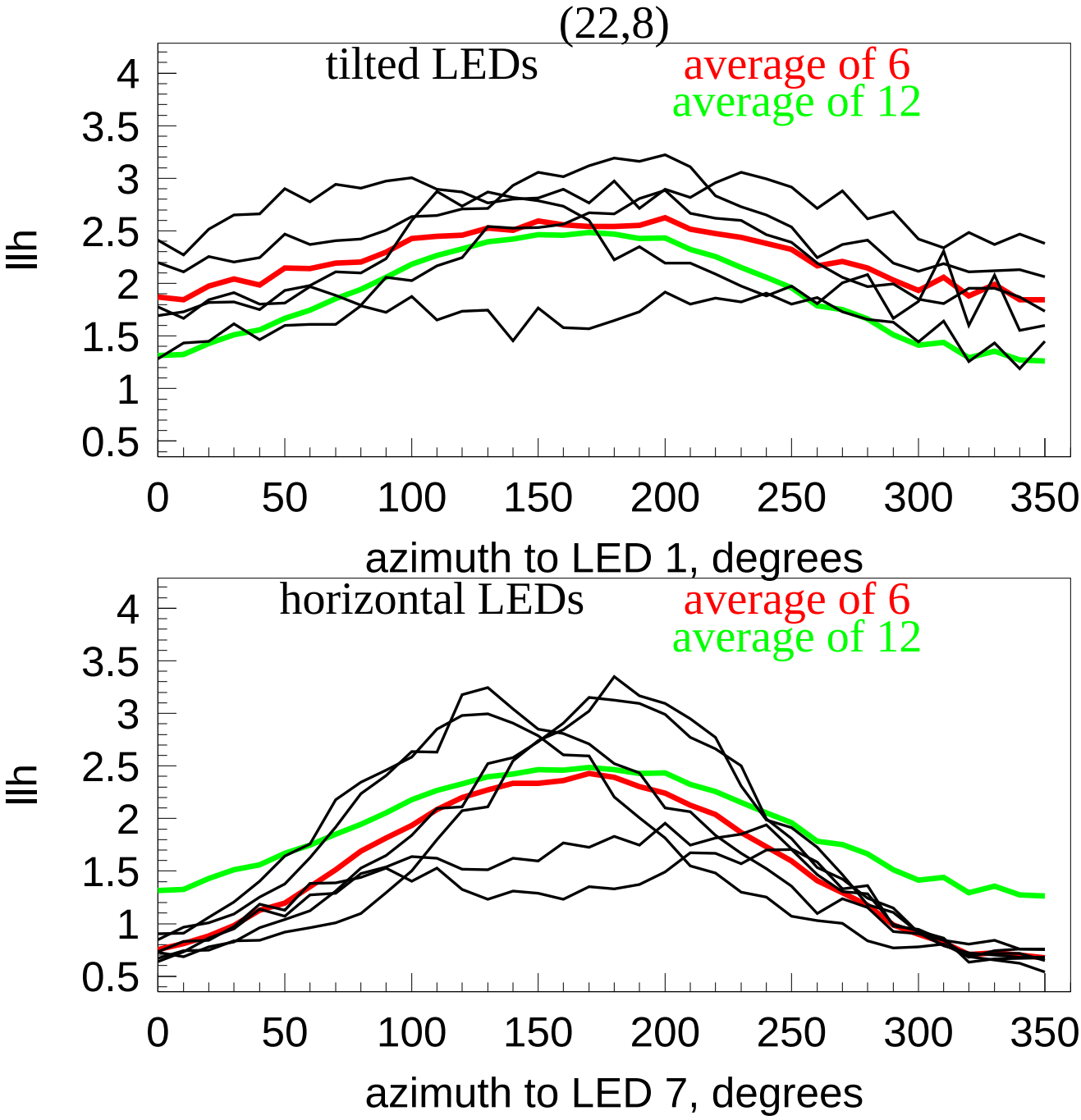

(20,13)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
7
6
1
11
5
50
2
8
4
3
10
9

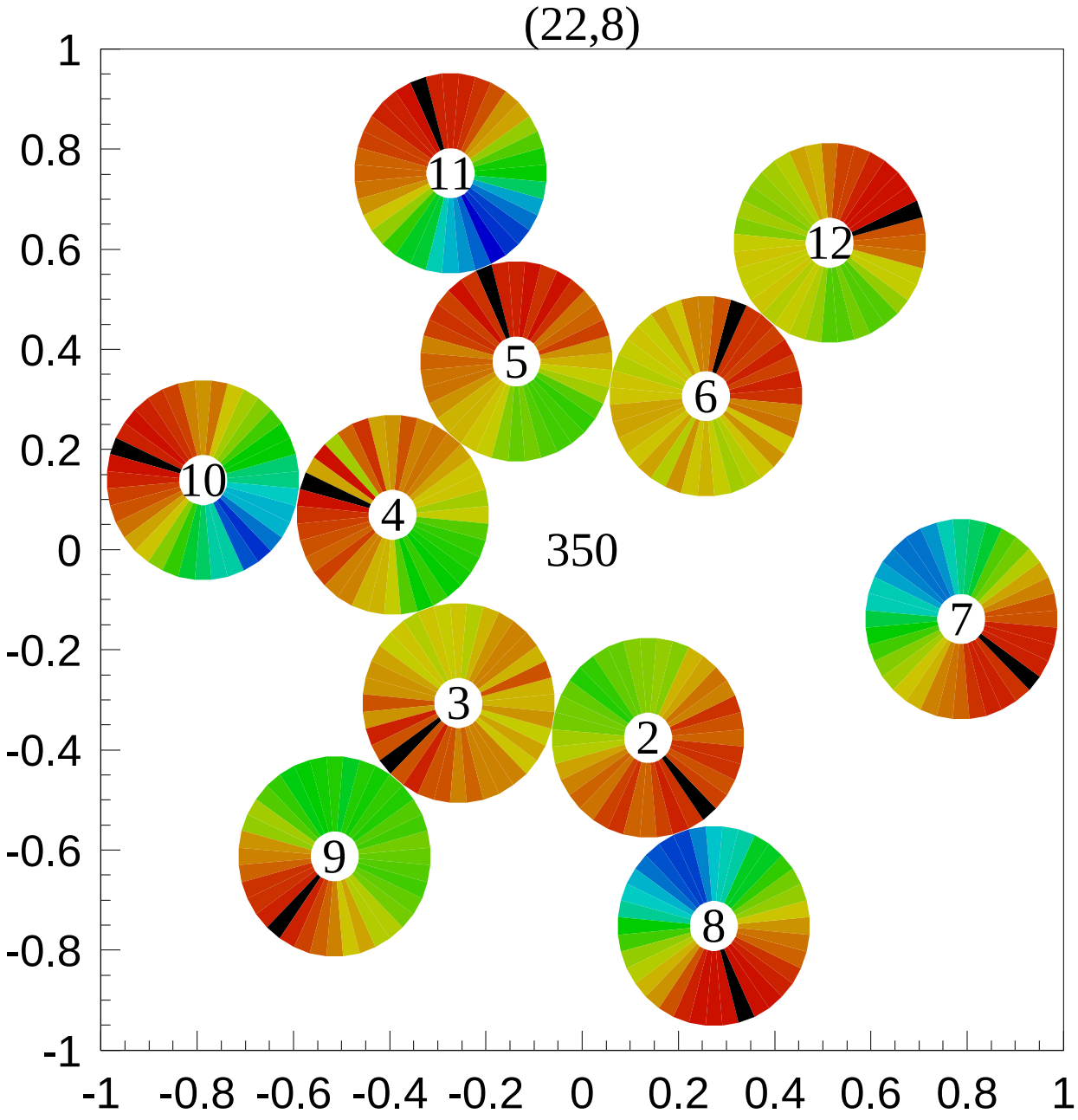

(20,22)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees
0
5
10
15
20
25
30
35
0
50
100
150
200
250
300
350

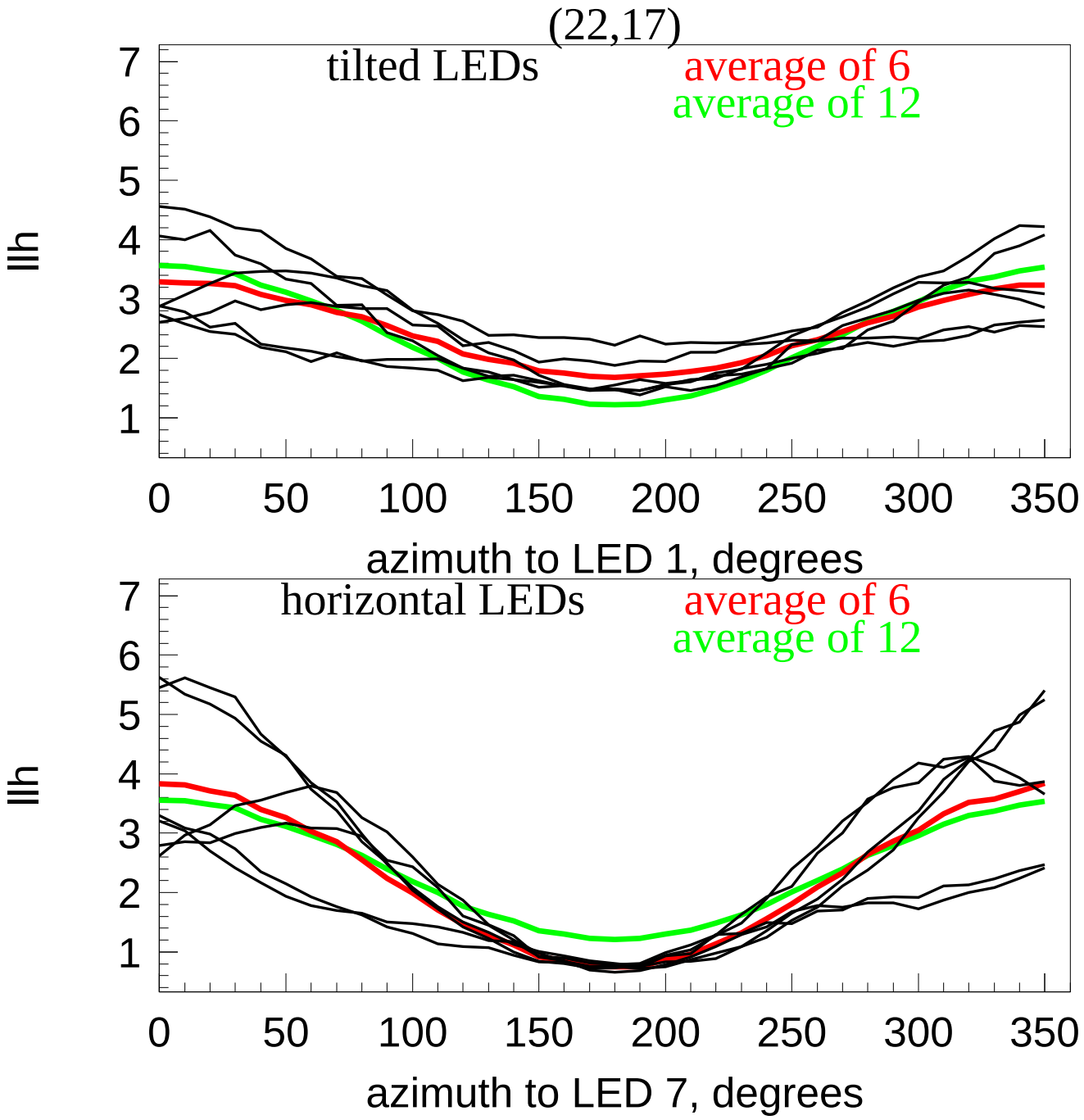

(20,22)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
9
2
3
7
180
6
5
12
11

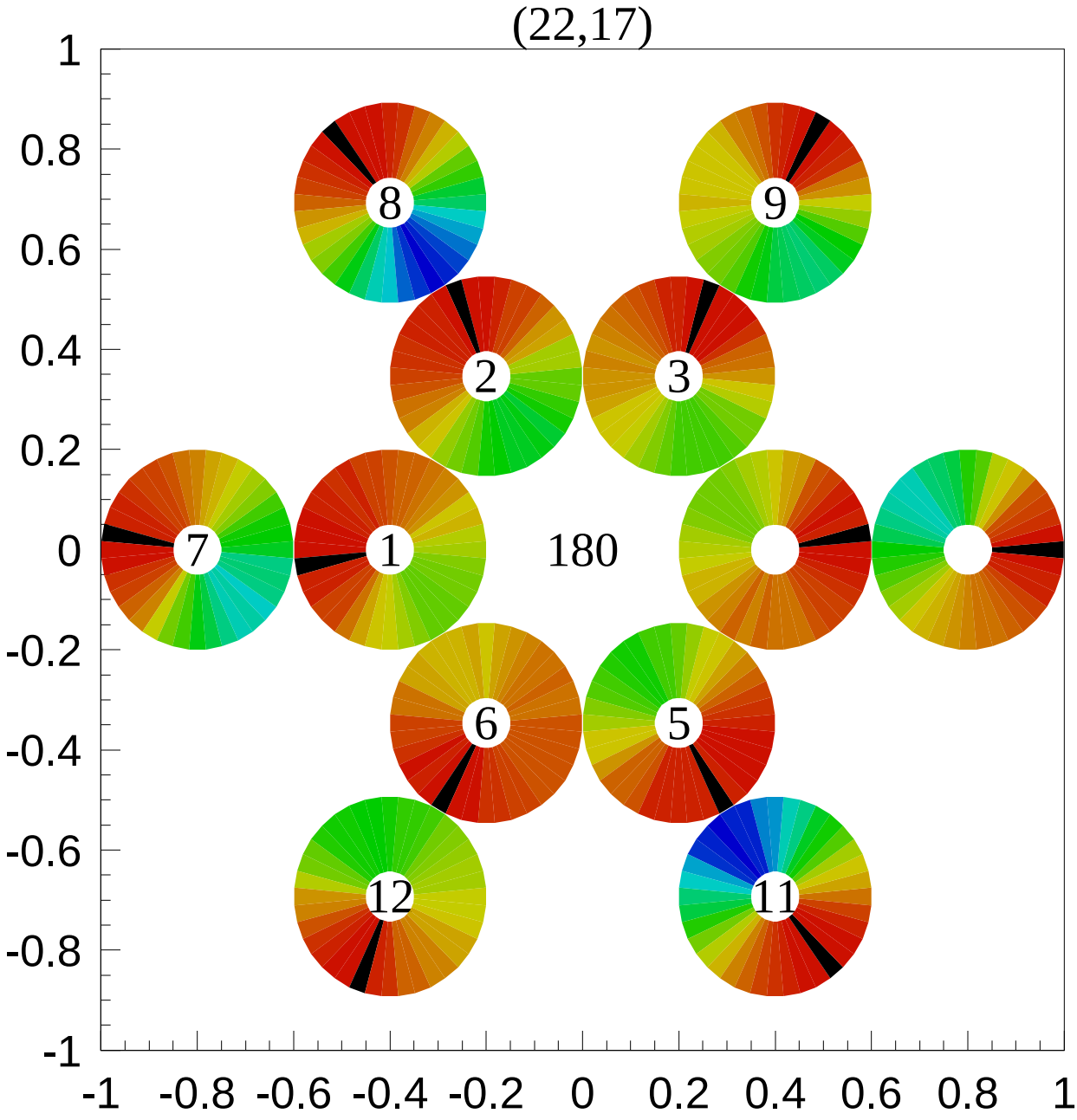

(20,51)
tilted LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

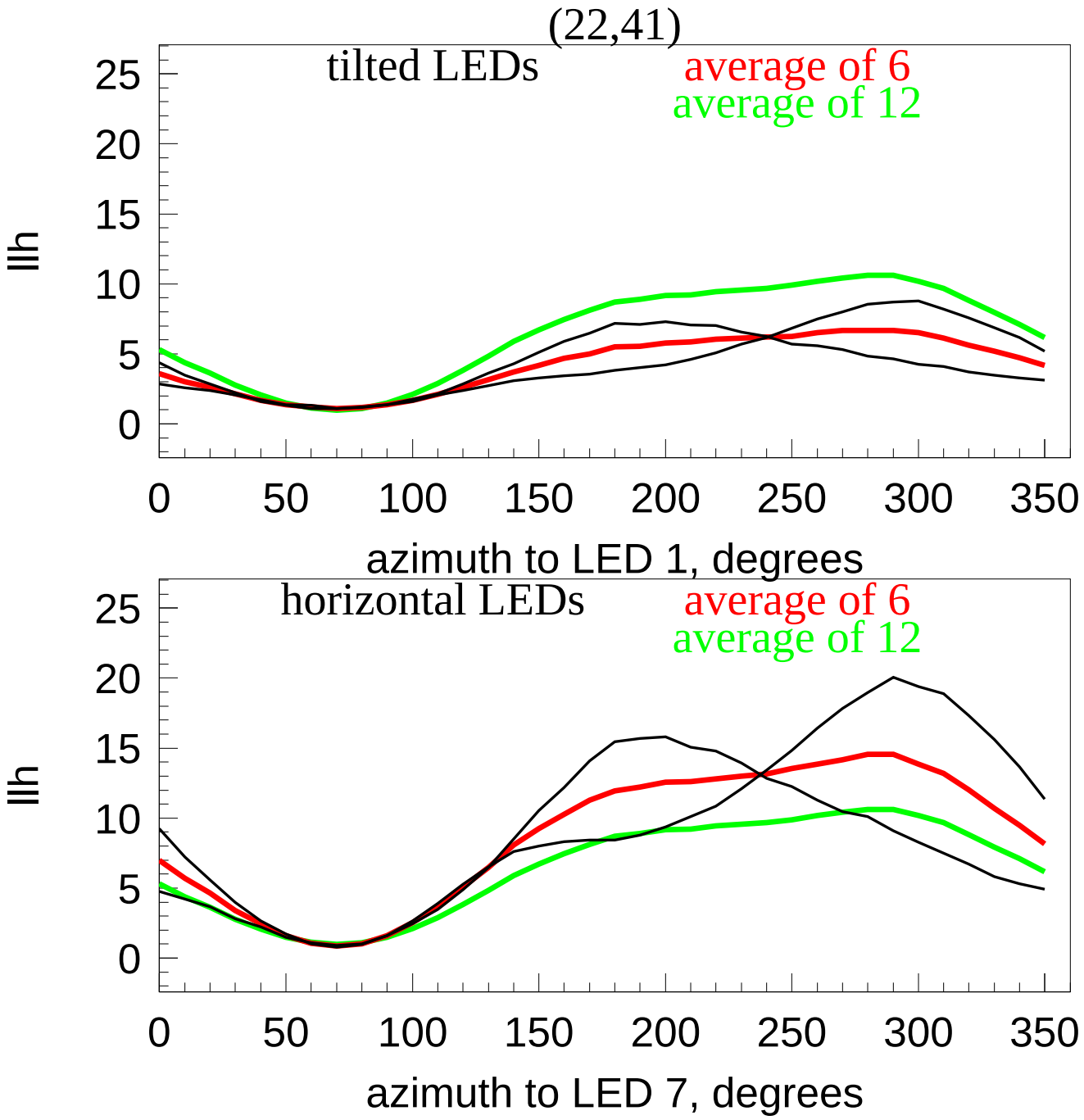

(20,51)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
160
5
11

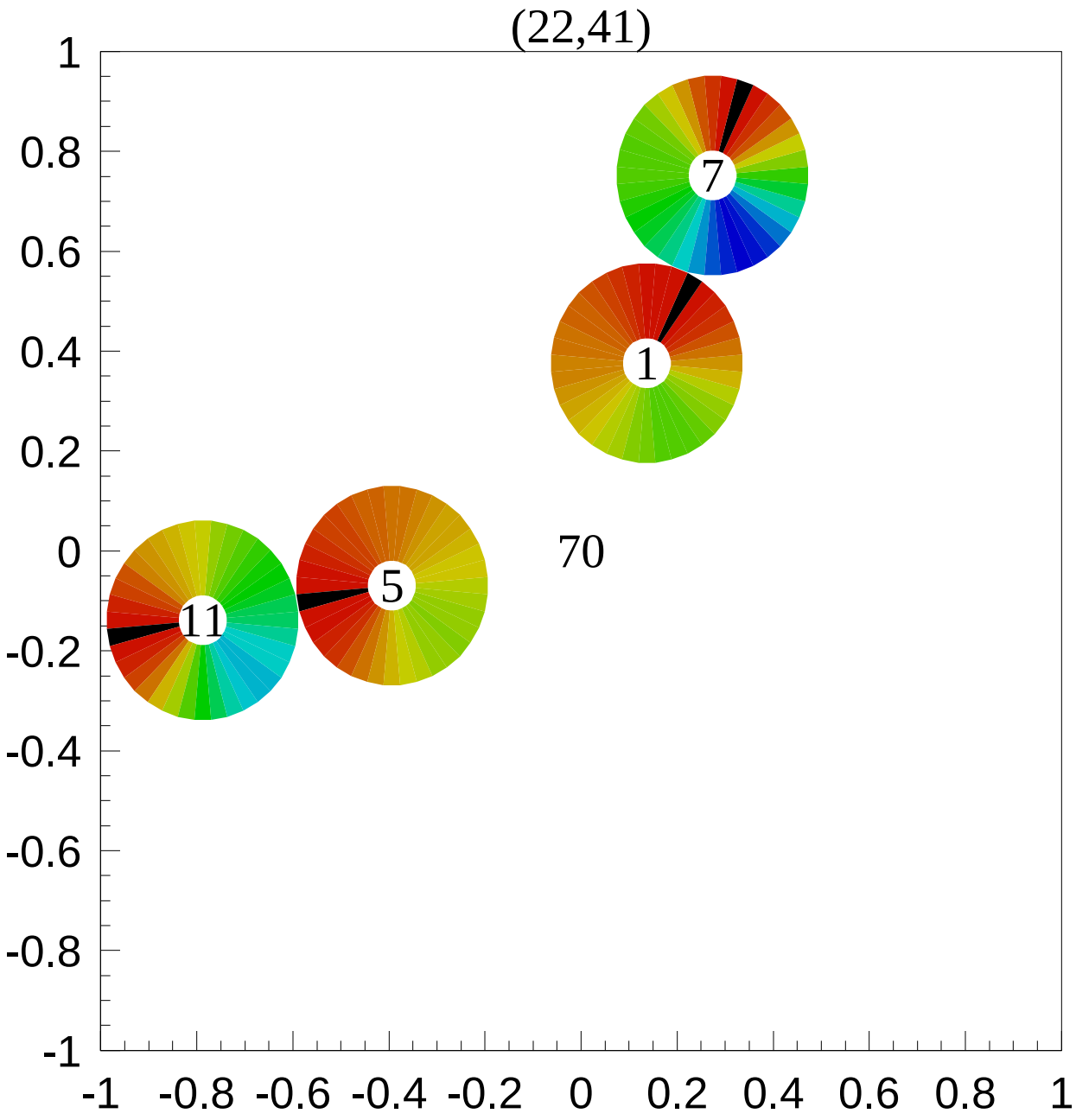

(22,8)
tilted LEDs
average of 6
average of 12
Ilh
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

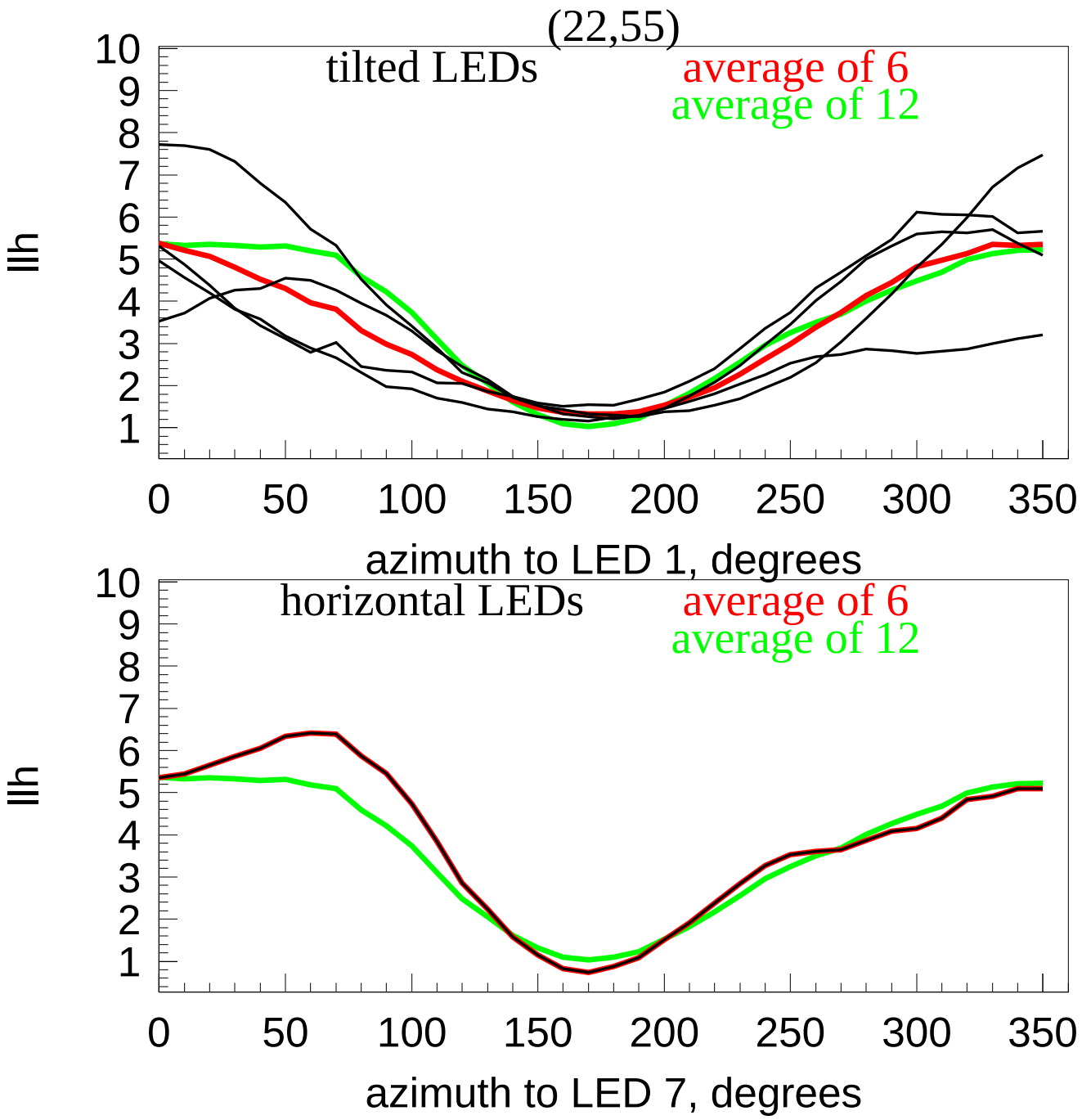

(22,8)
11
12
5
6
10
4
350
7
3
2
9
8
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

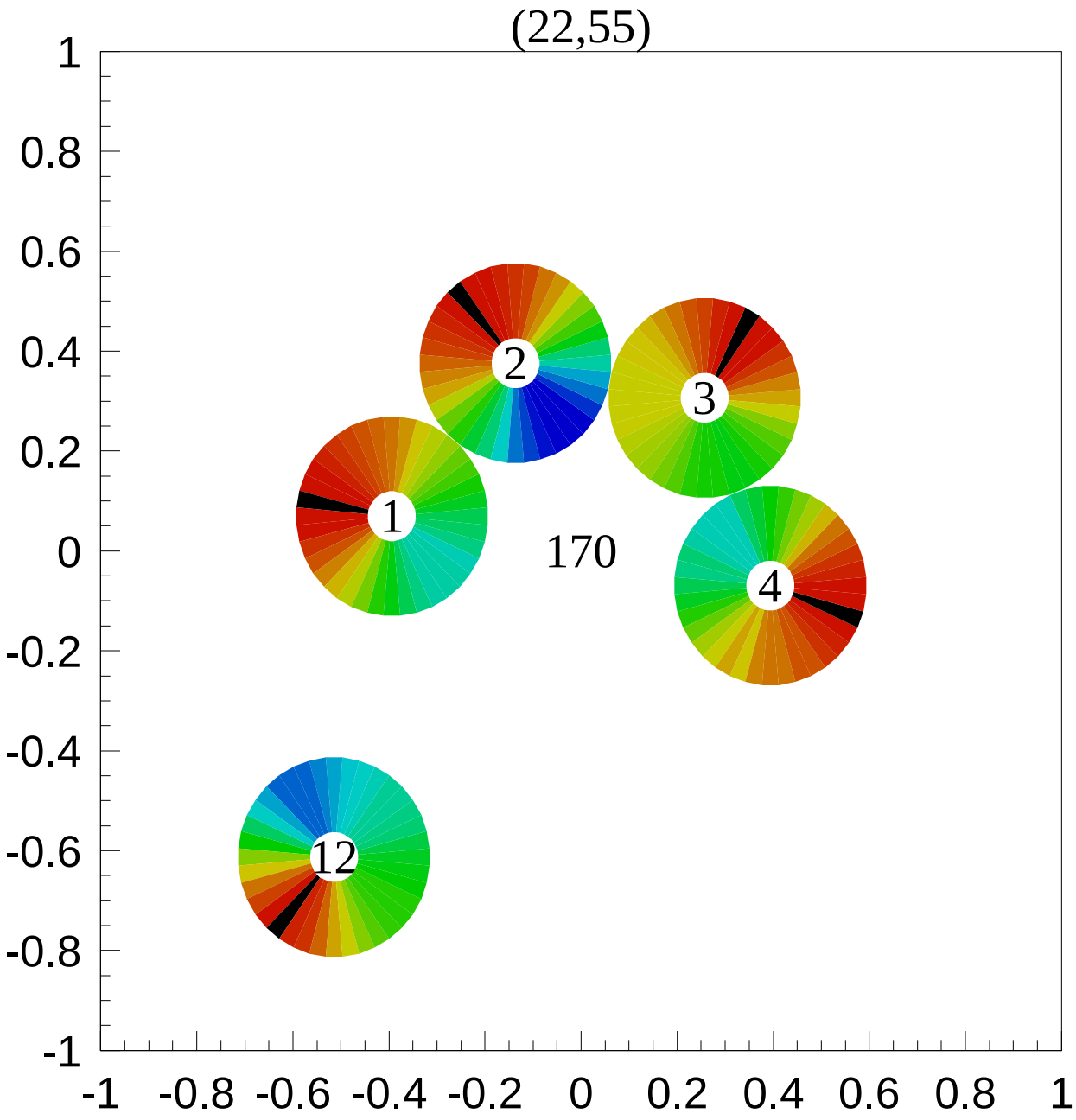

(22,17)
tilted LEDs
average of 6
average of 12
Ilh
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

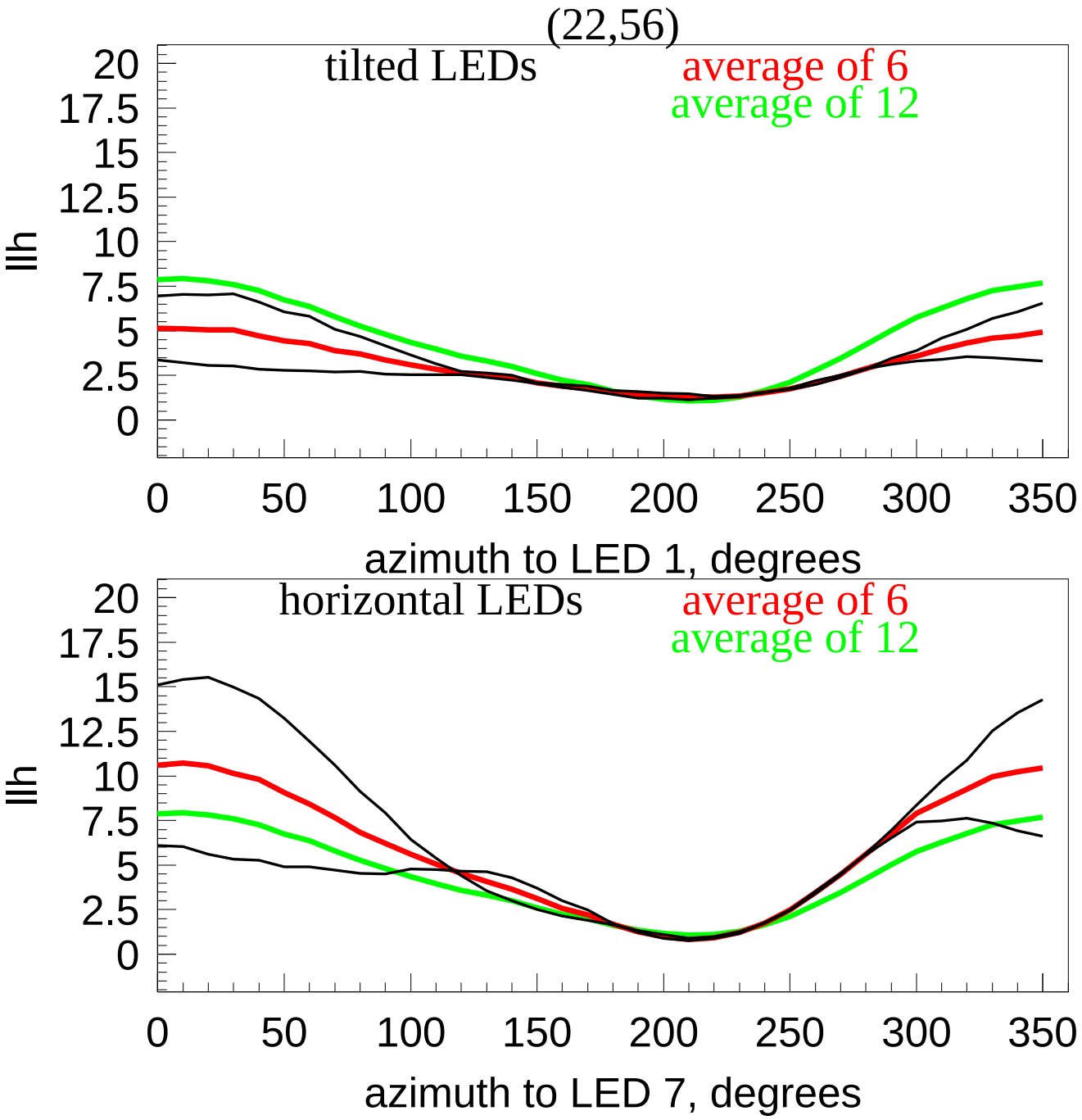

(22,17)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
9
2
3
7
1
180
6
5
12
11

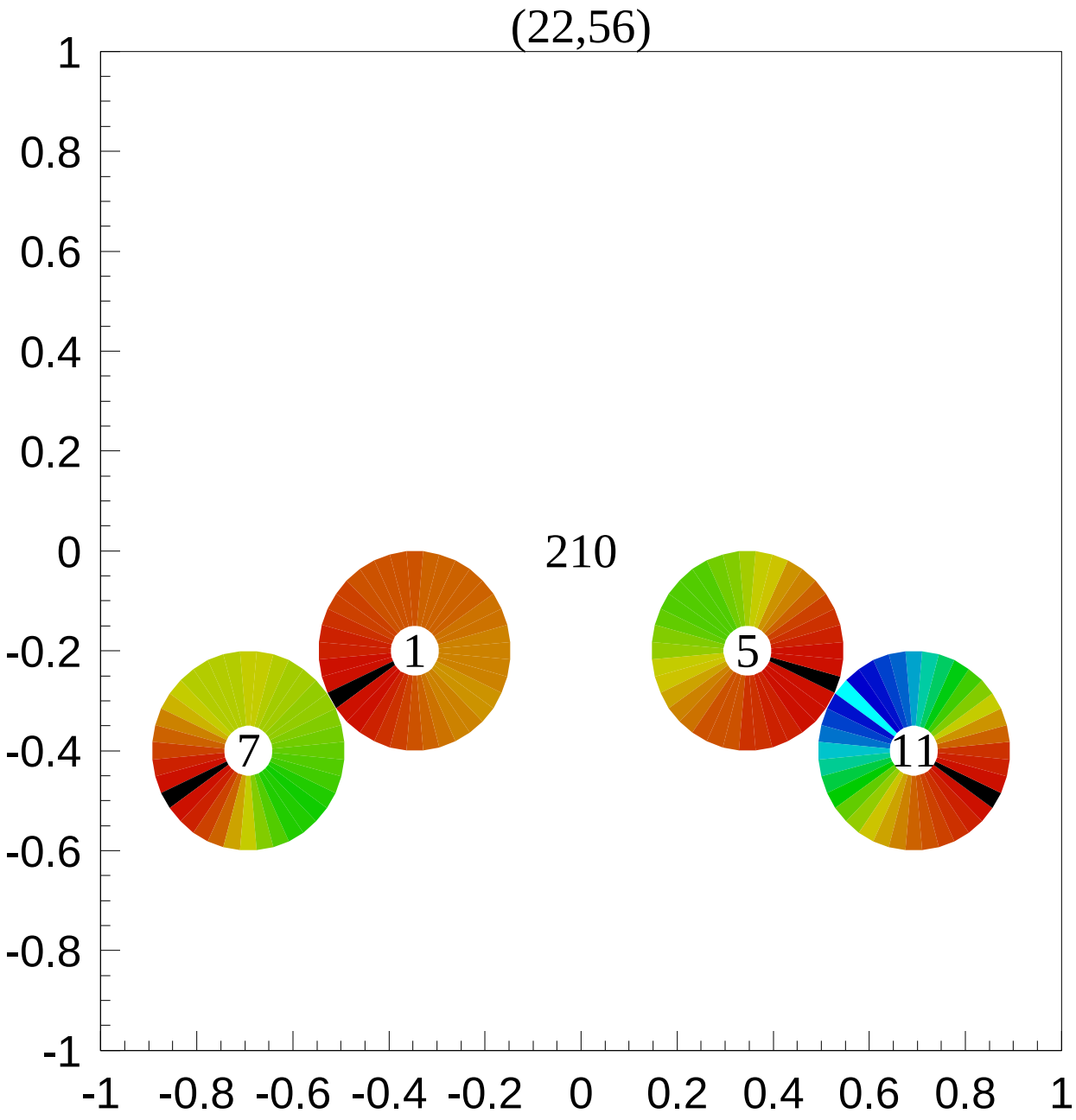

(22,41)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

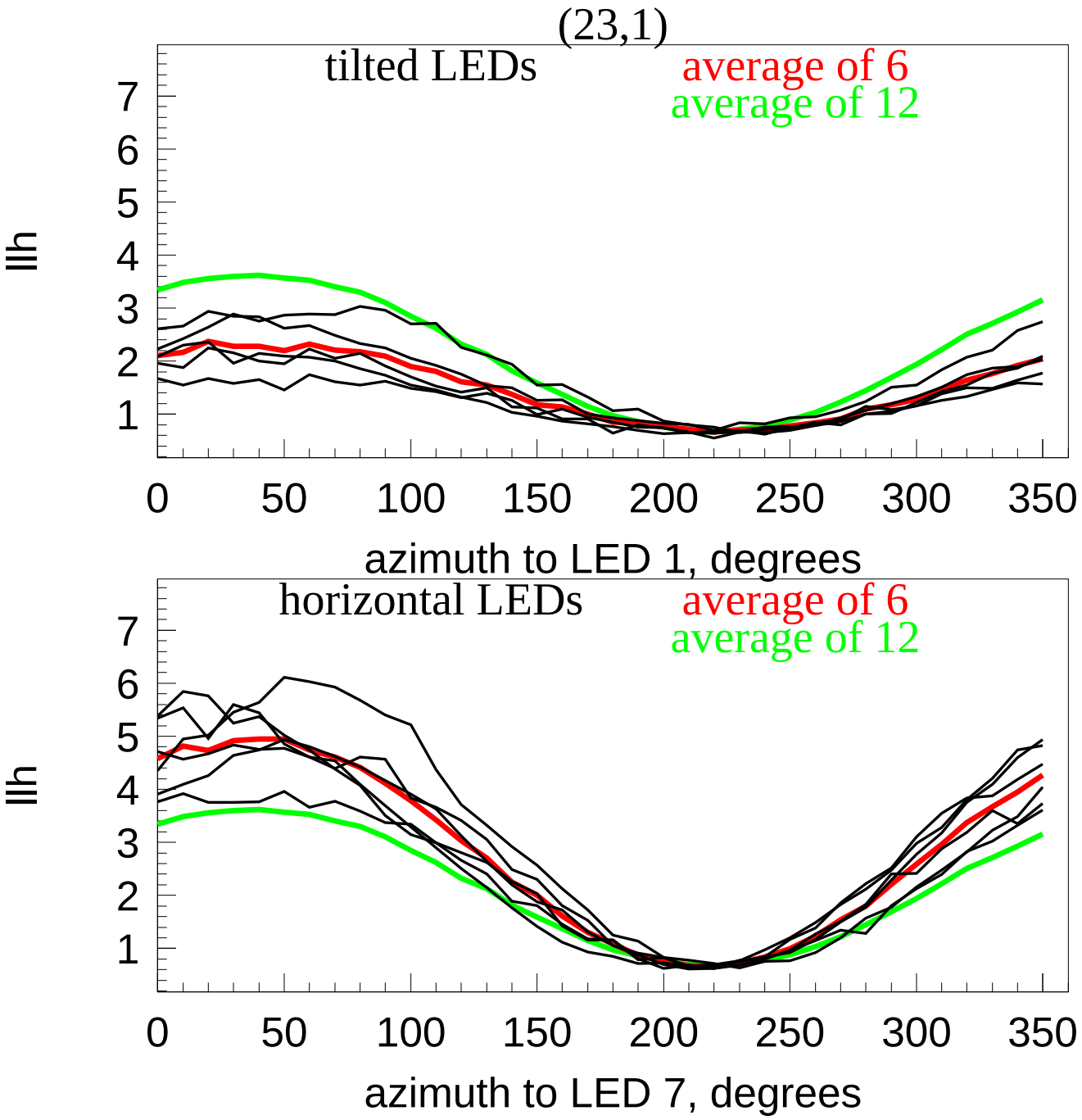

(22,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
5
11
70

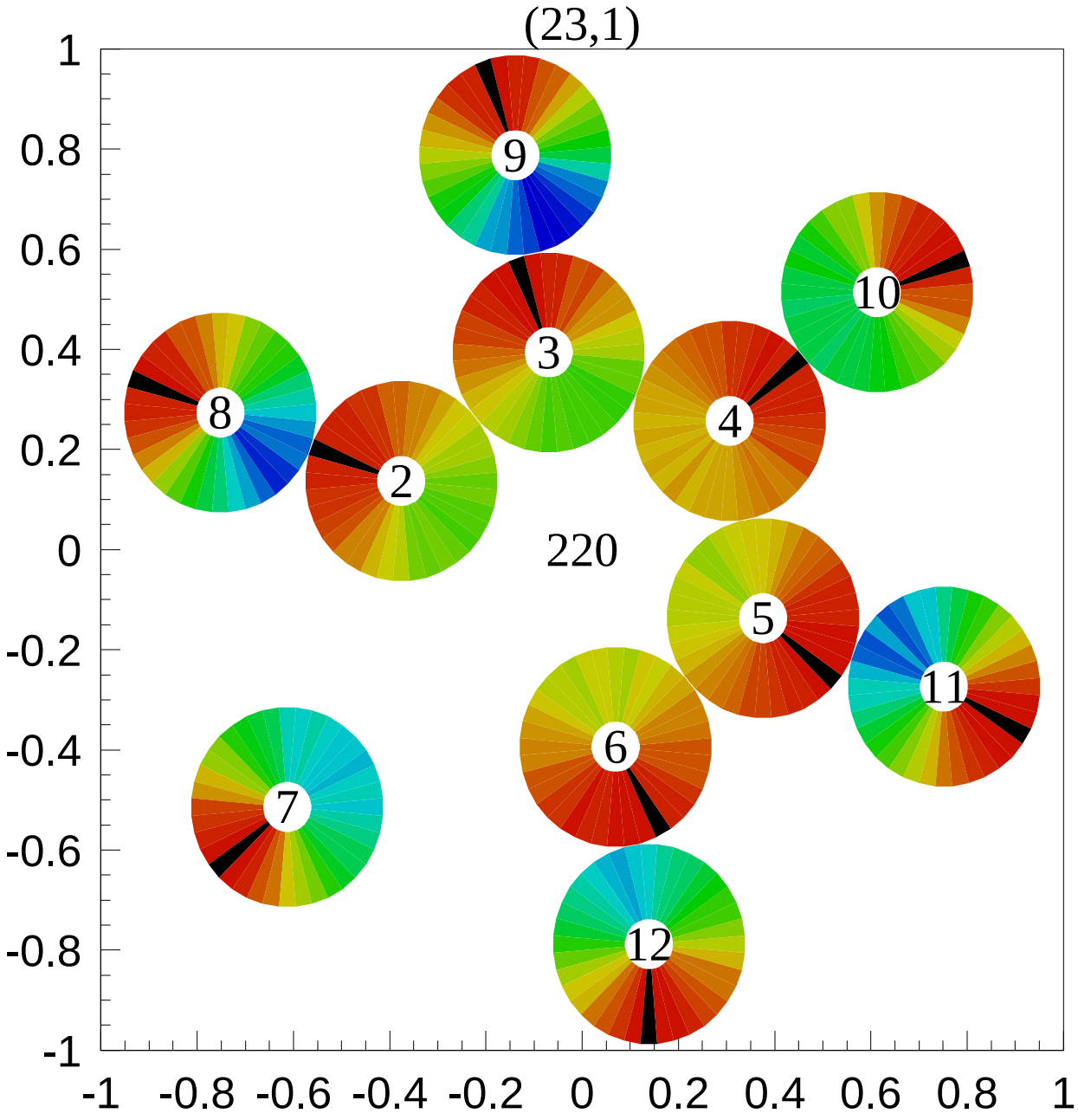

(22,55)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

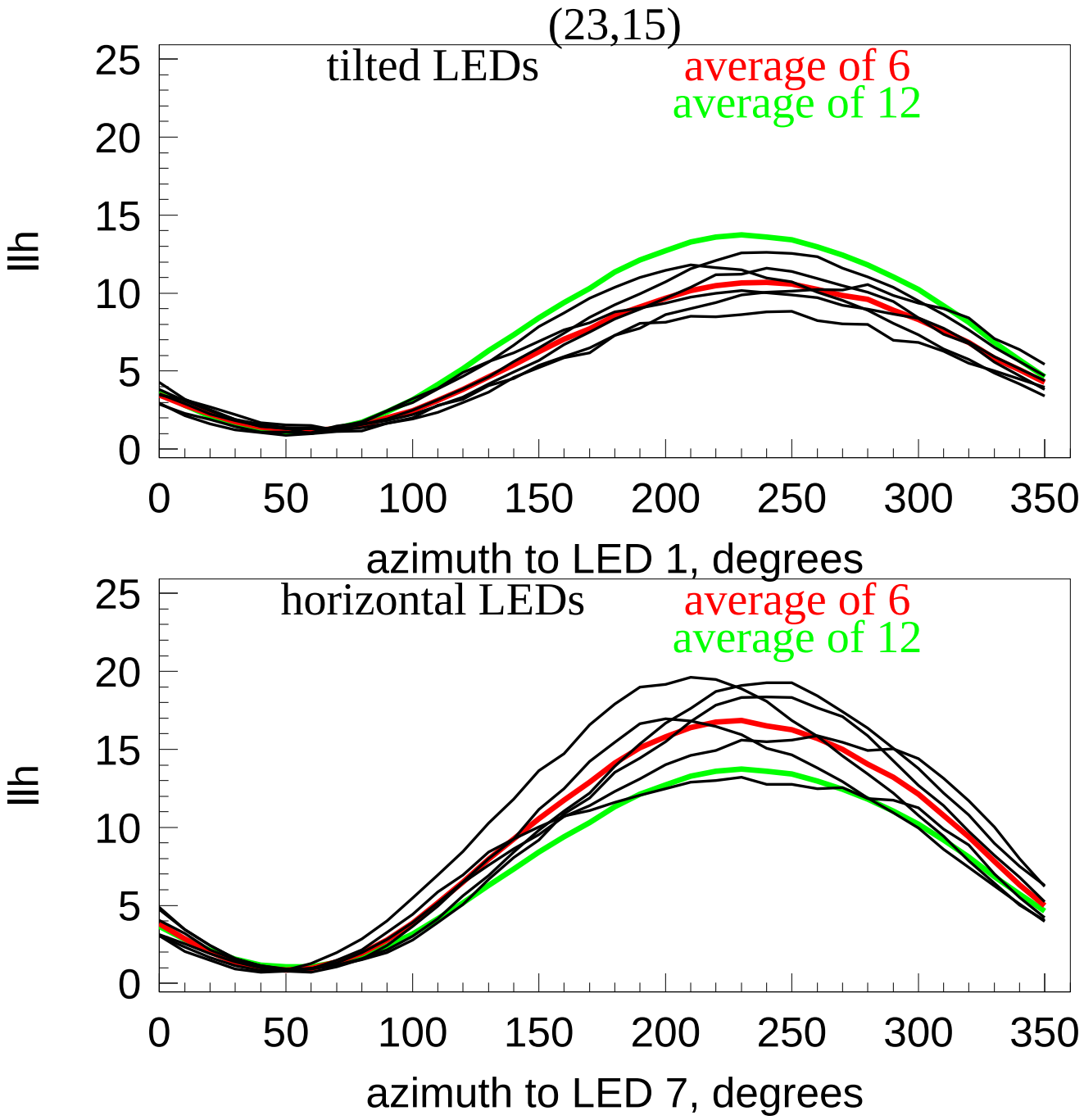

(22,55)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
2
3
1
170
4
12

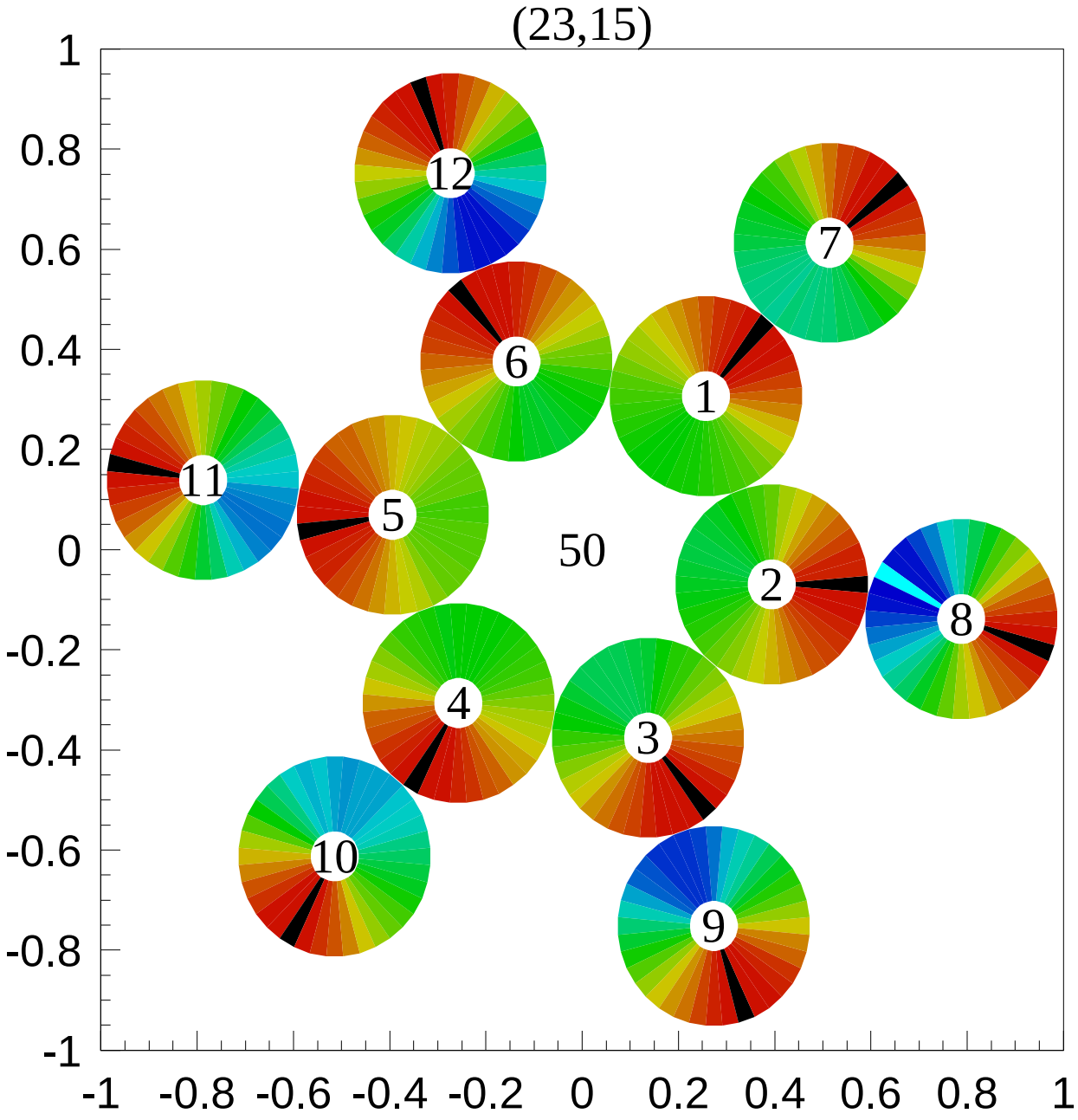

(22,56)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

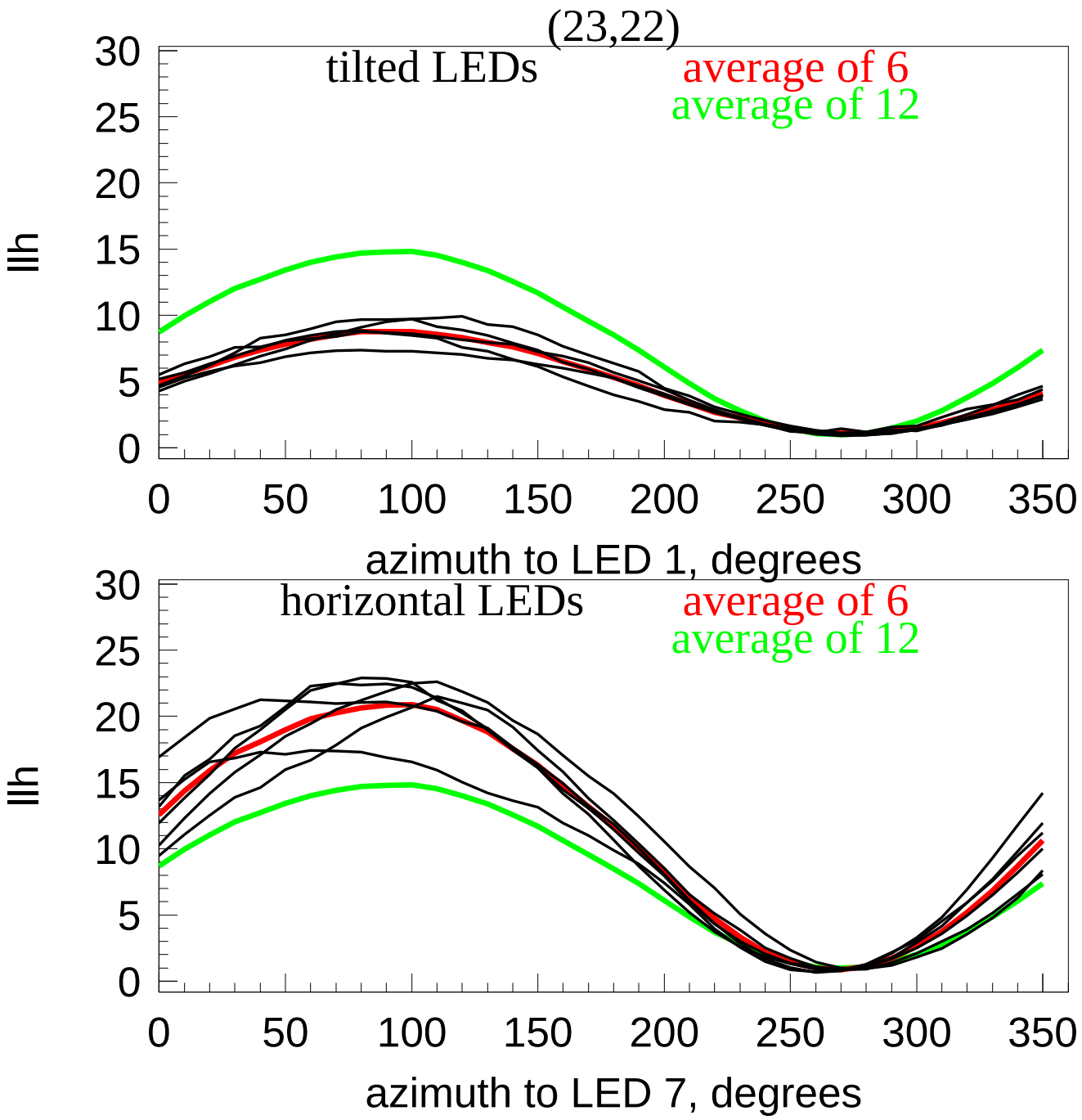

(22,56)
210
1
5
7
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

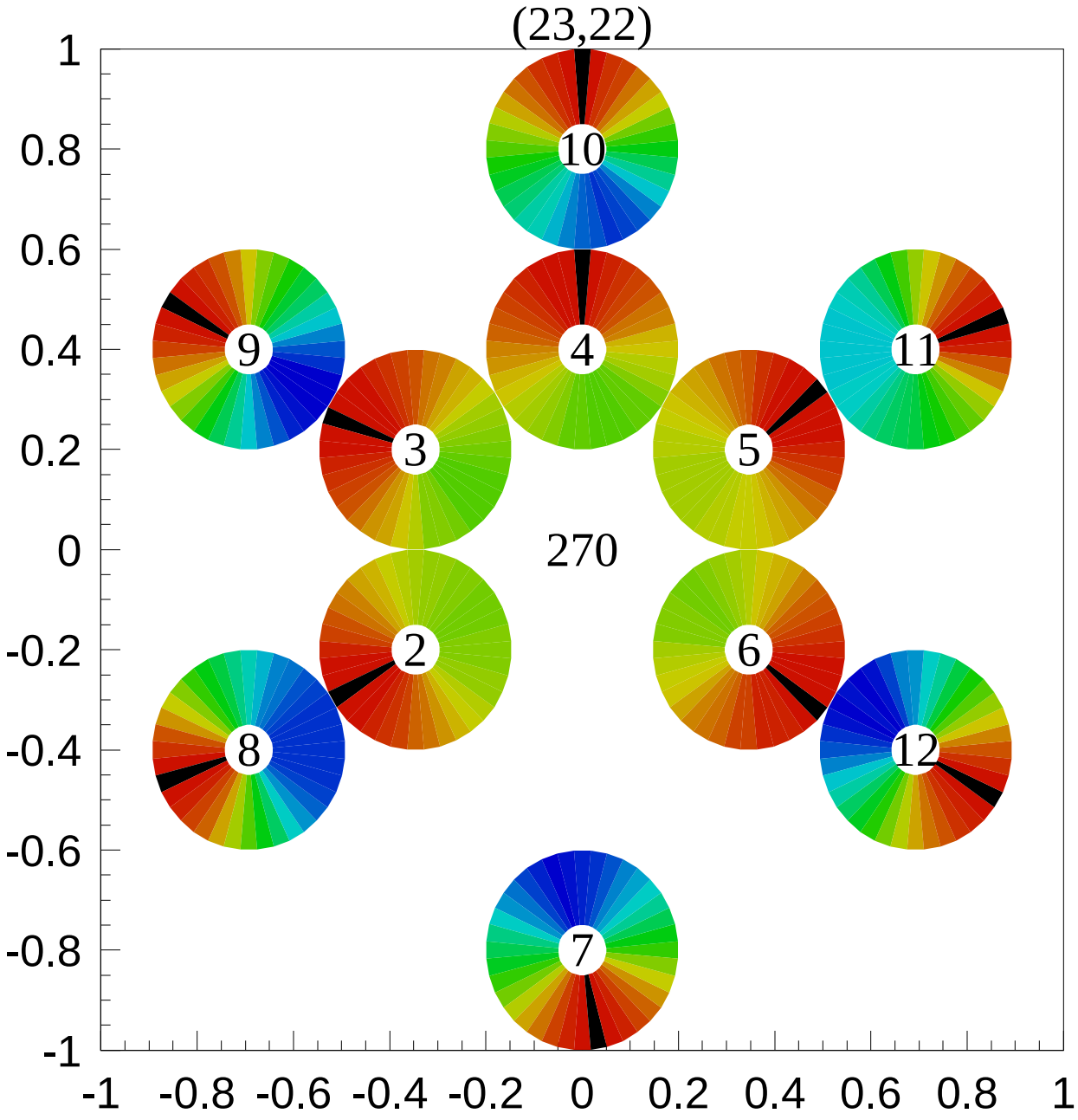

(23,1)
tilted LEDs
average of 6
average of 12
Ilh
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

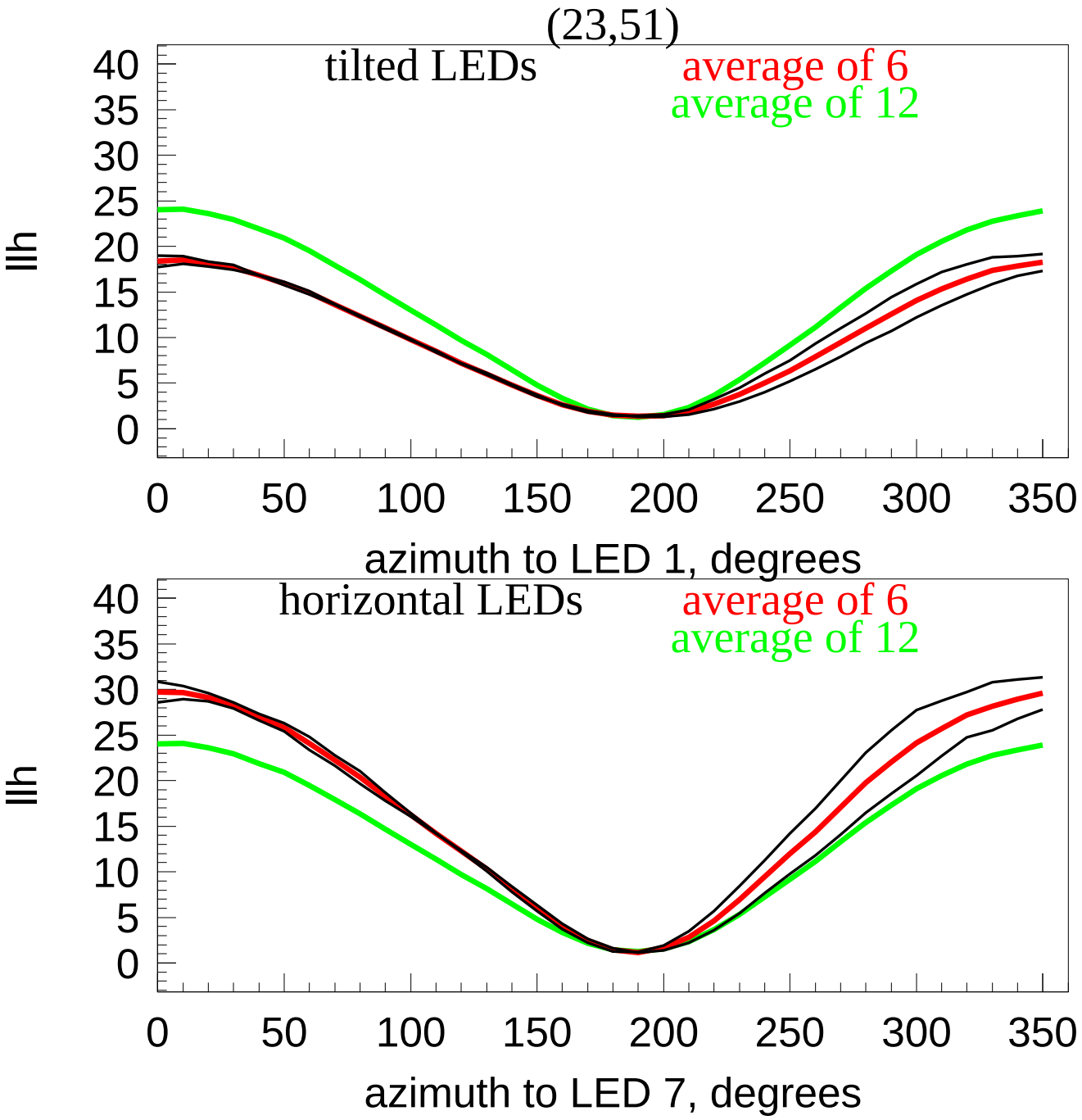

(23,1)
220
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
10
3
8
4
2
5
11
6
7
12

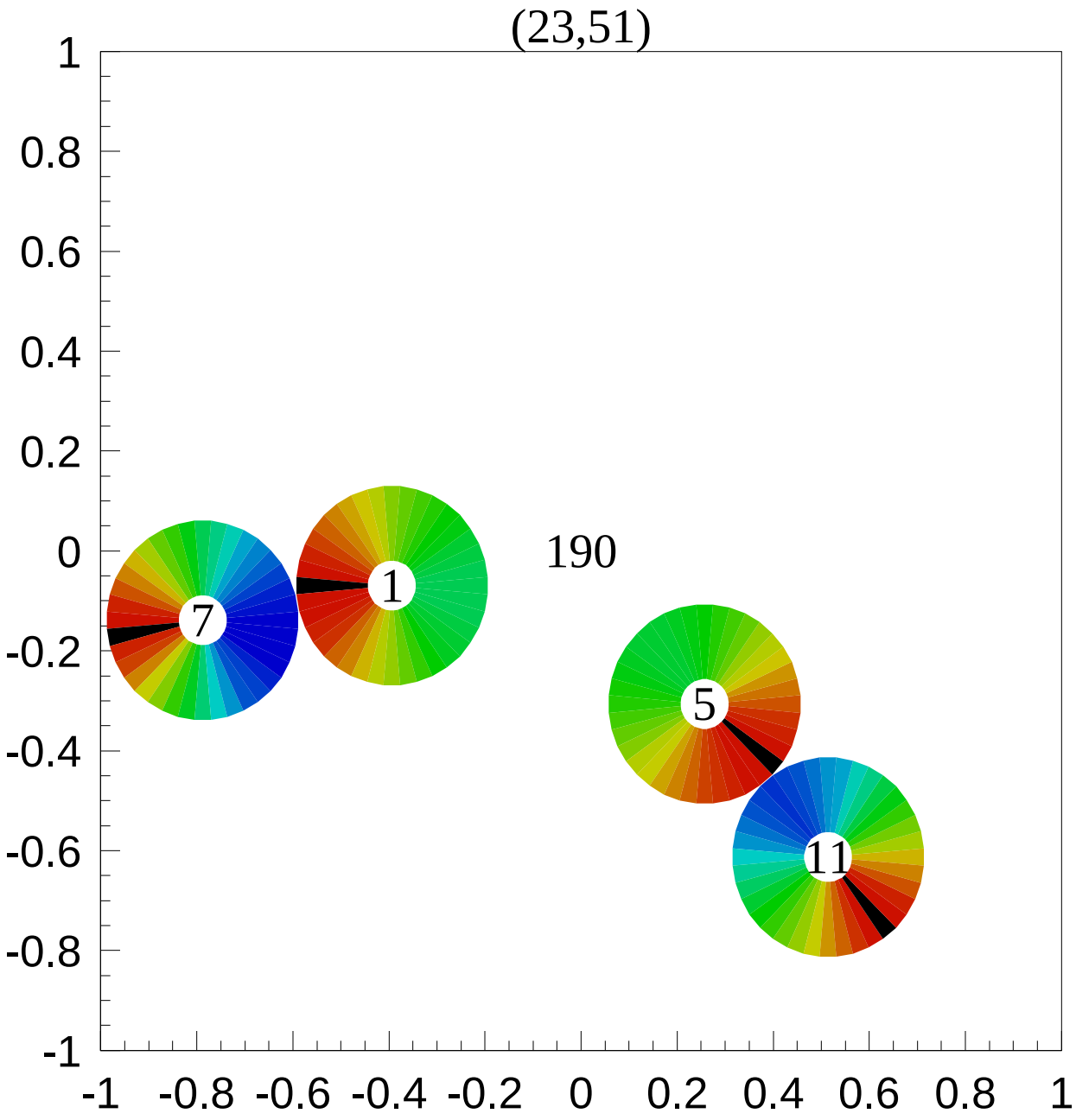

(23,15)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

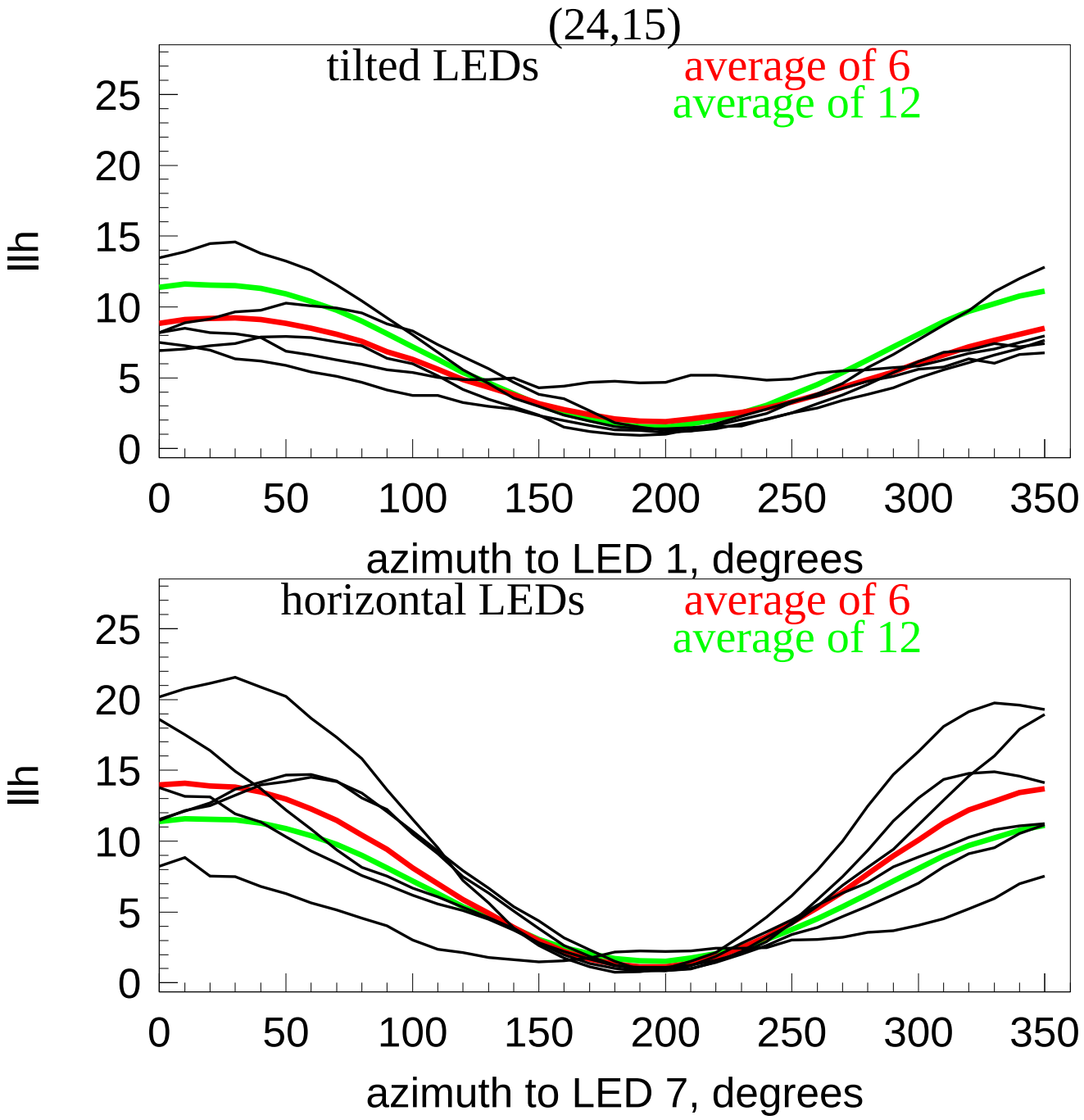

(23,15)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
7
6
1
11
5
50
2
8
4
3
10
9

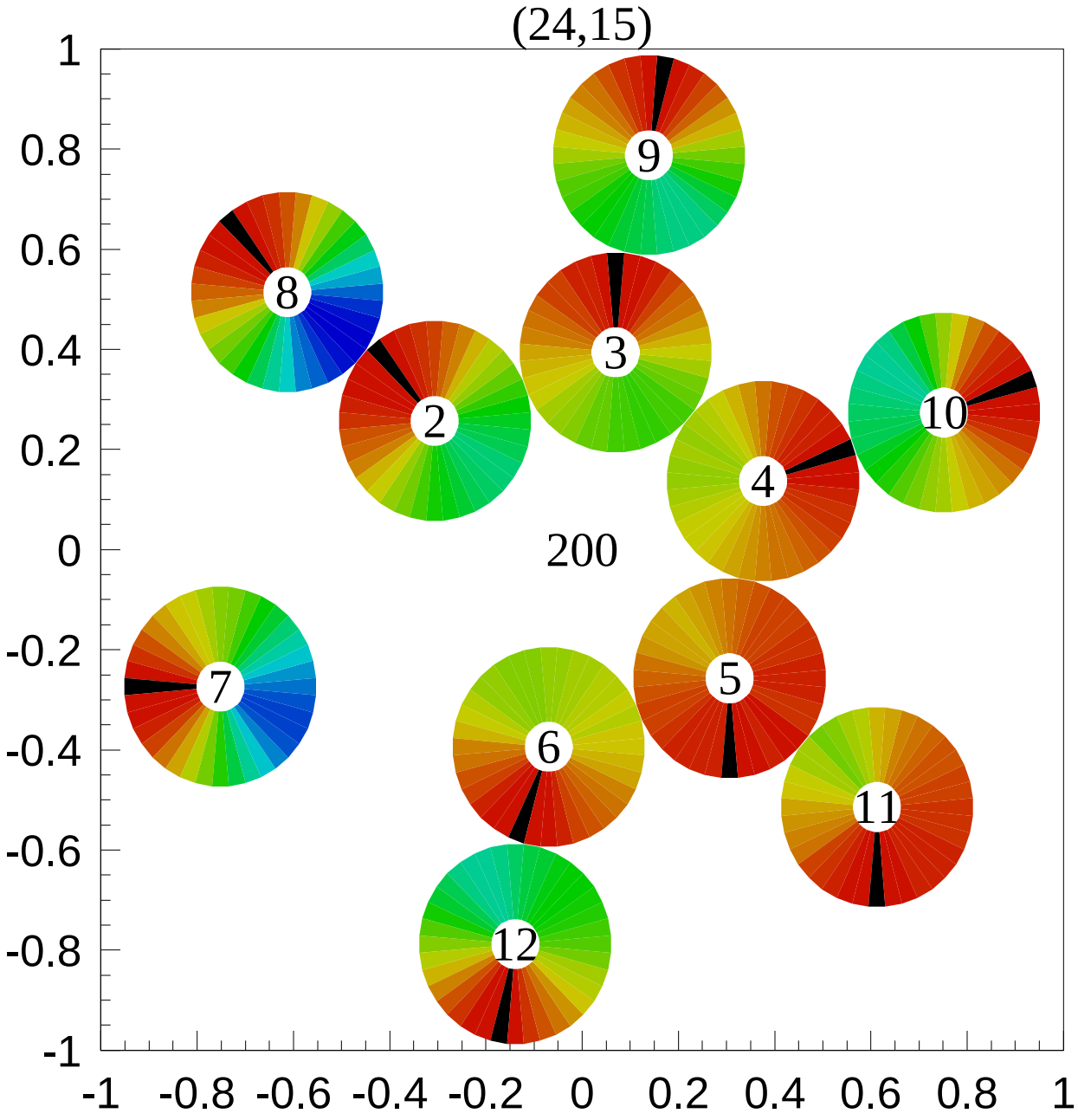

(23,22)
tilted LEDs
average of 6
average of 12
IIh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
IIh
azimuth to LED 7, degrees

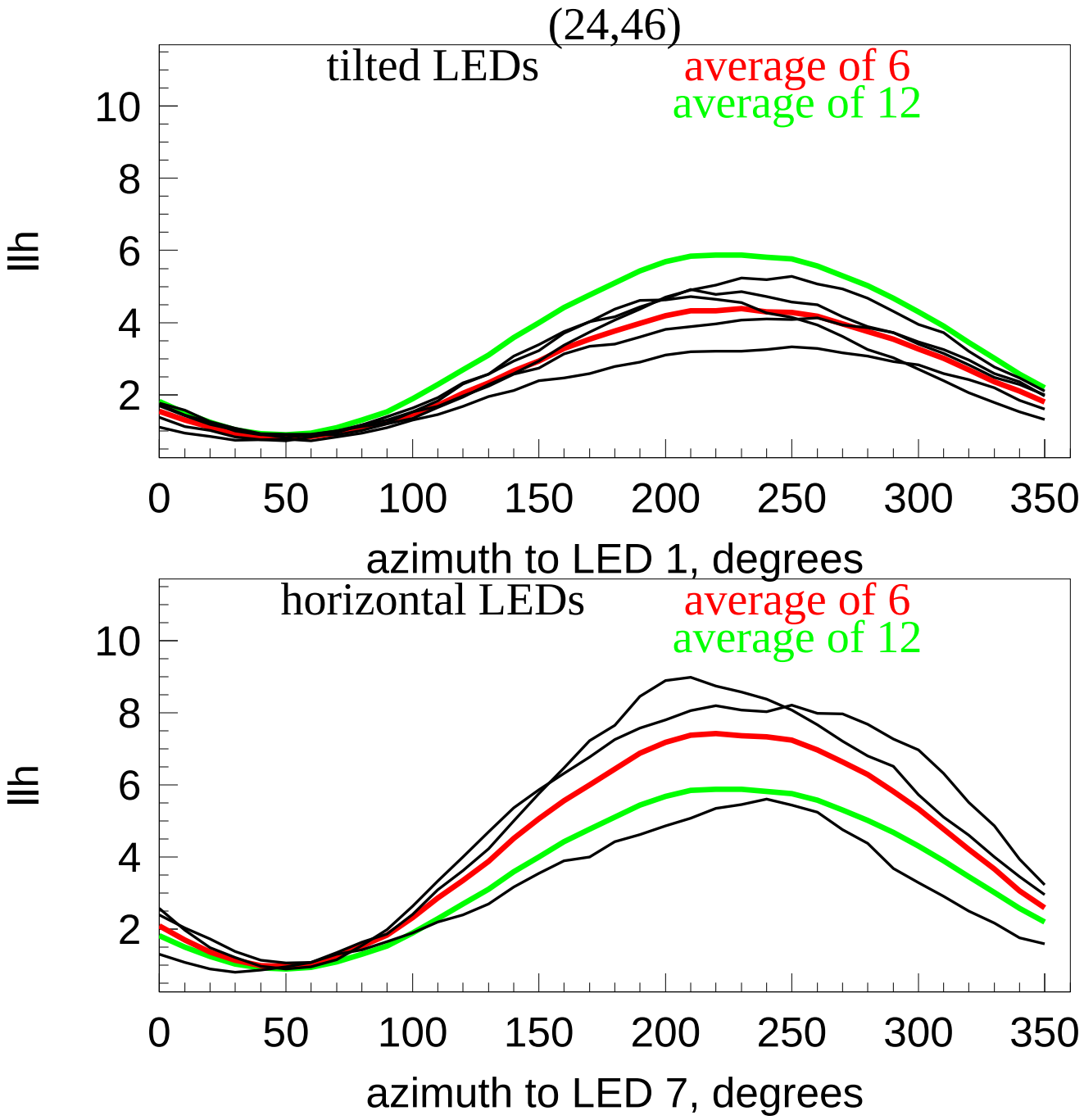

(23,22)
10
9
4
11
3
5
270
2
6
8
12
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

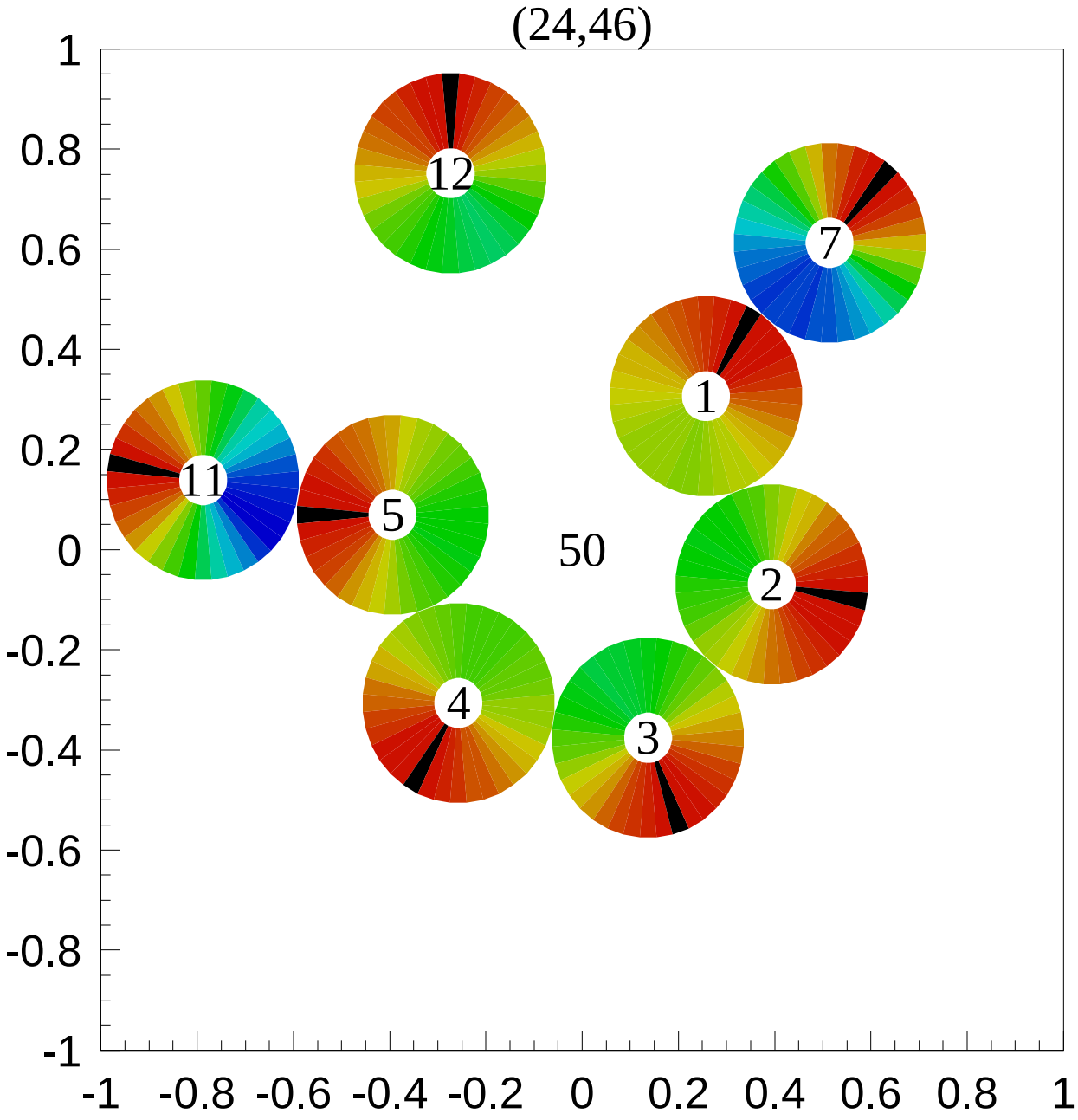

(23,51)
tilted LEDs
average of 6
average of 12
llh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

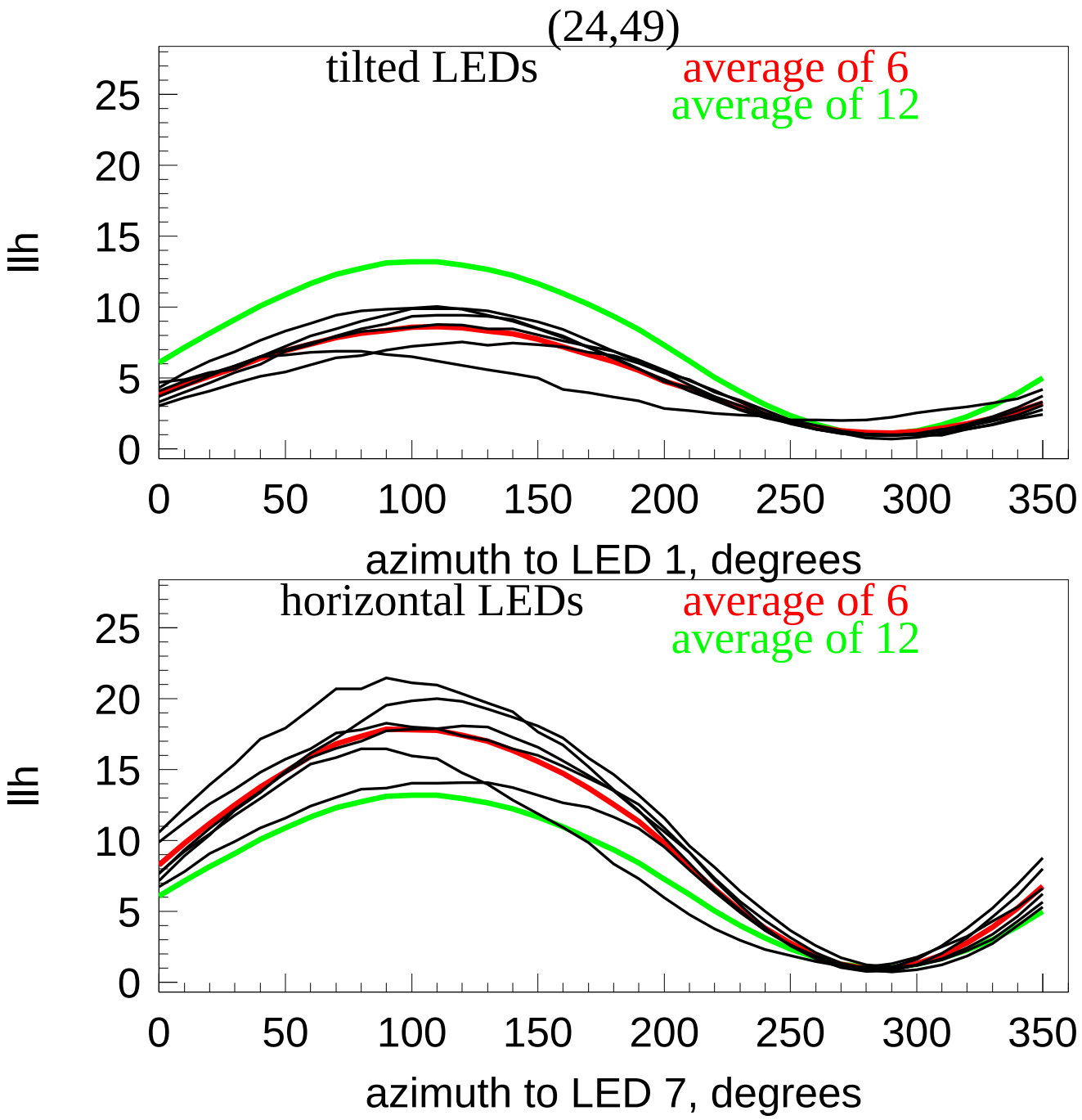

(23,51)
190
1
7
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

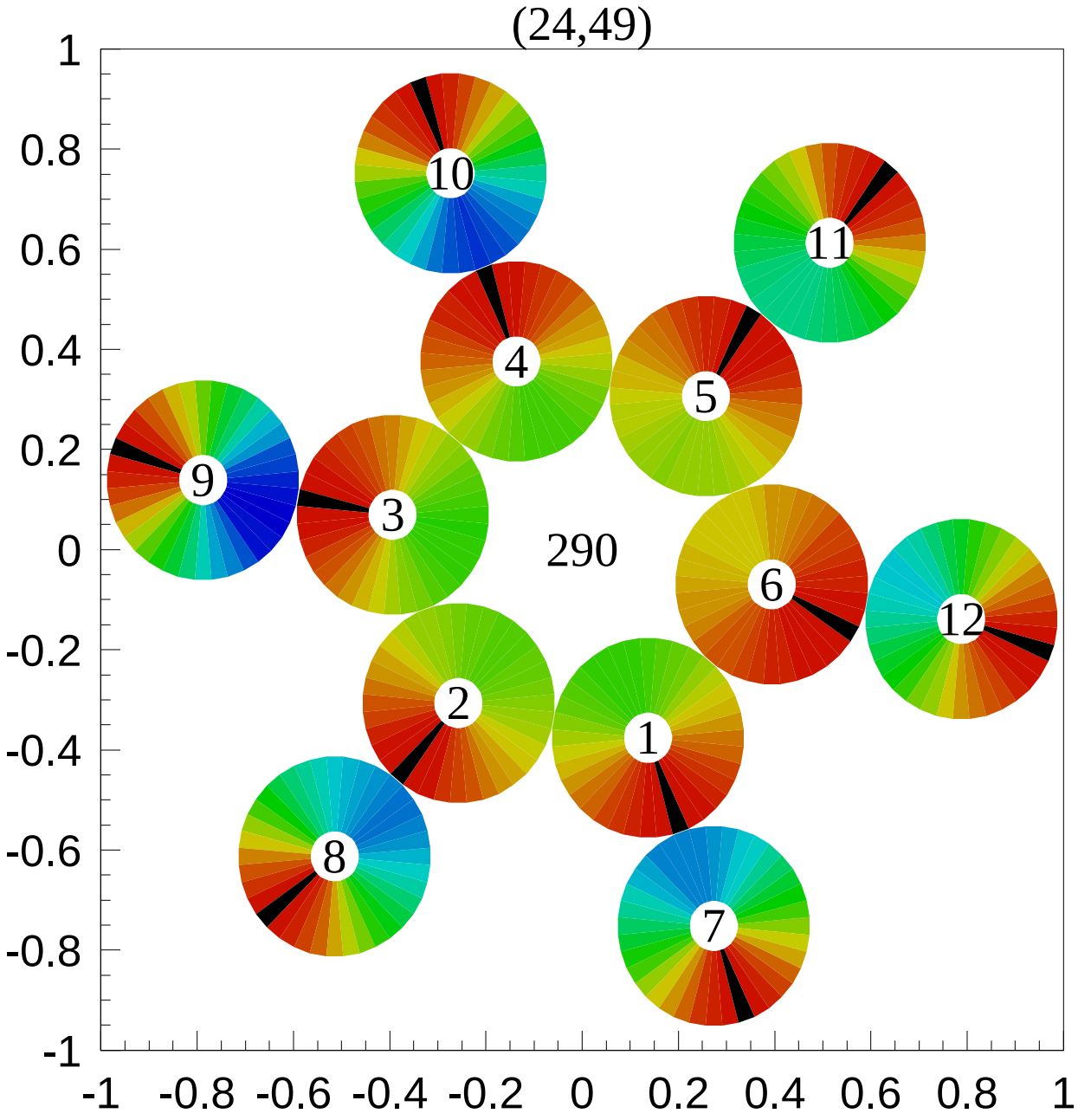

(24,15)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

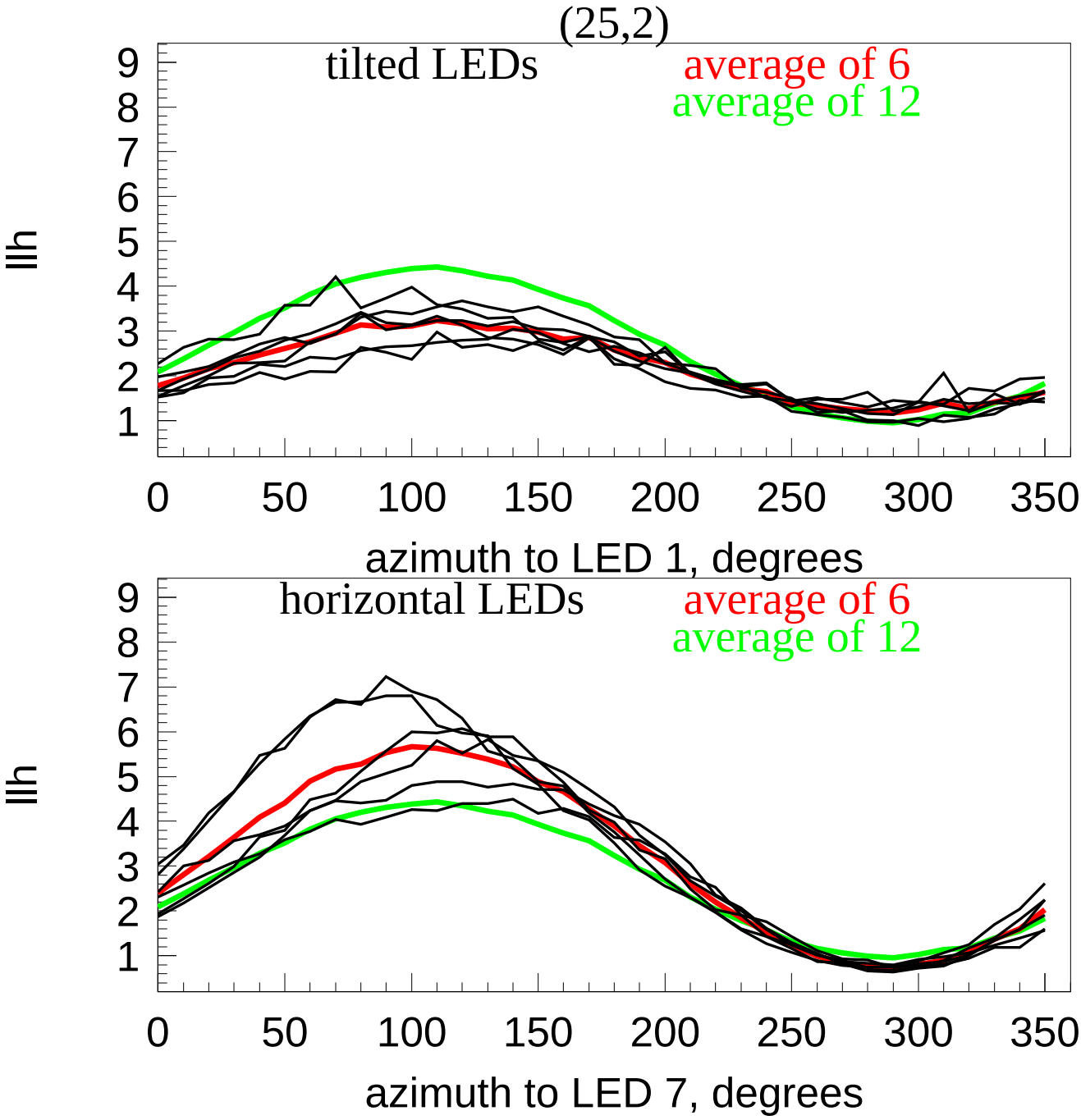

(24,15)
200
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

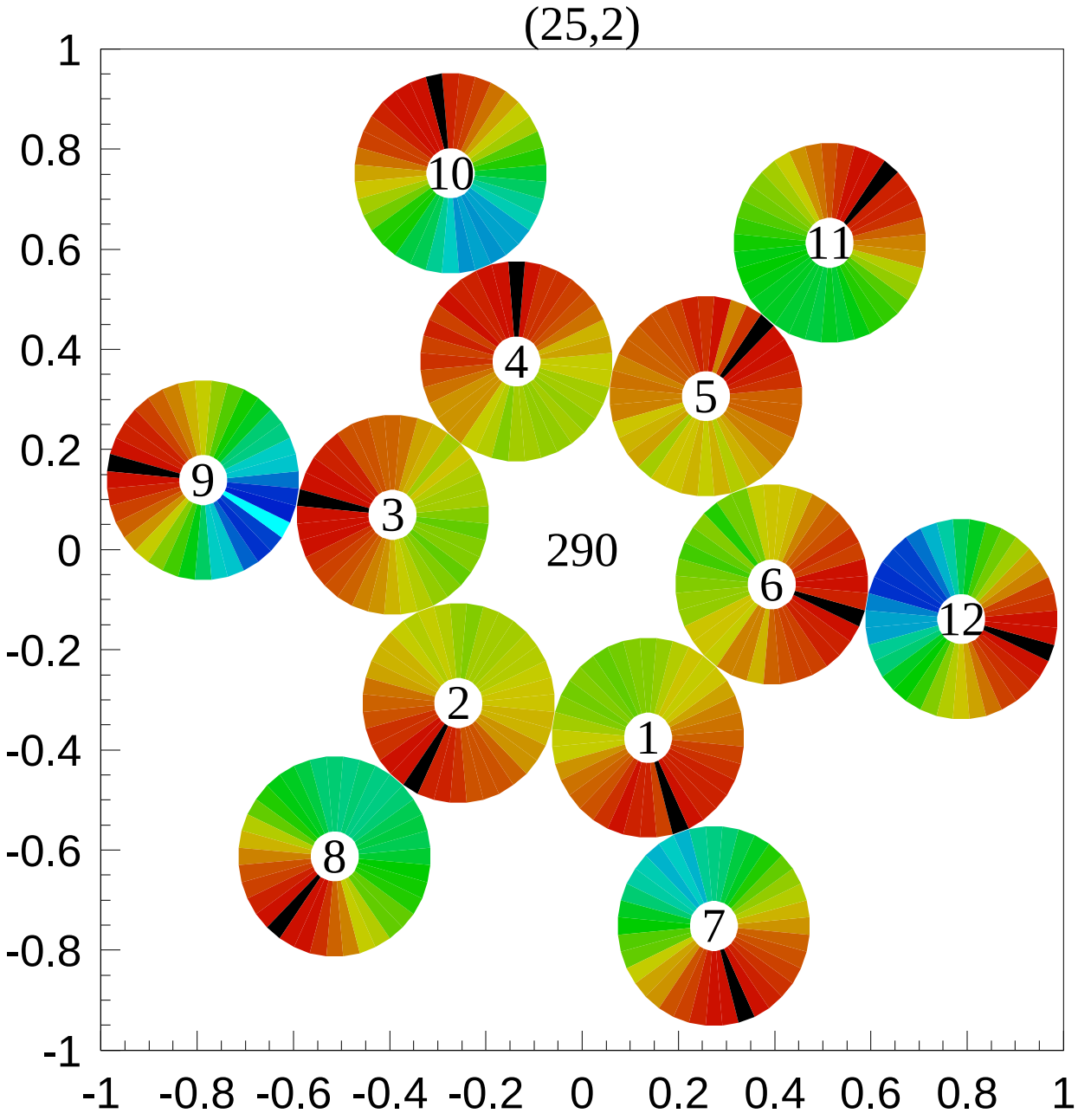

(24,46)
tilted LEDs
average of 6
average of 12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

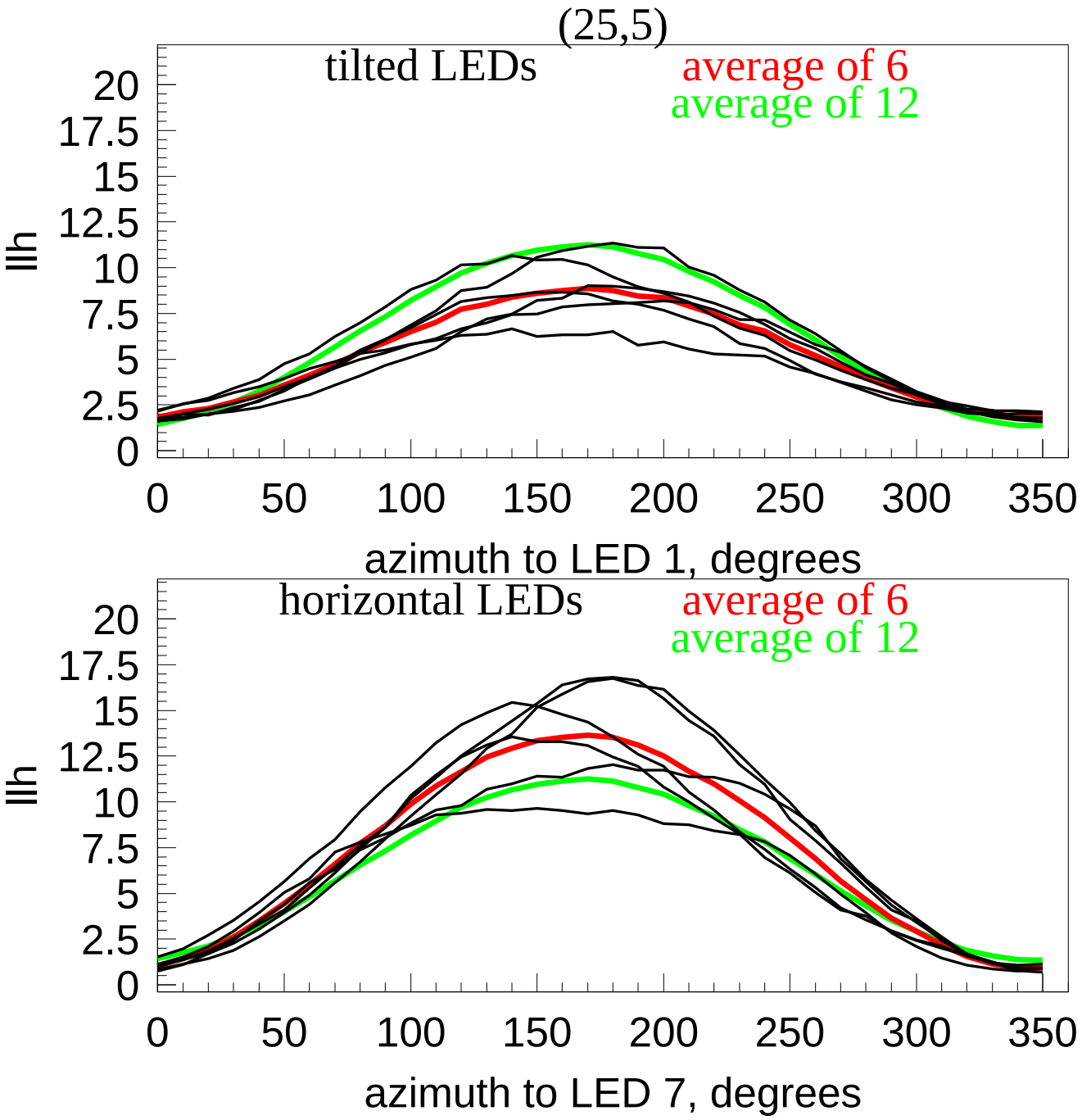

(24,46)
12
7
1
11
5
50
2
4
3
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

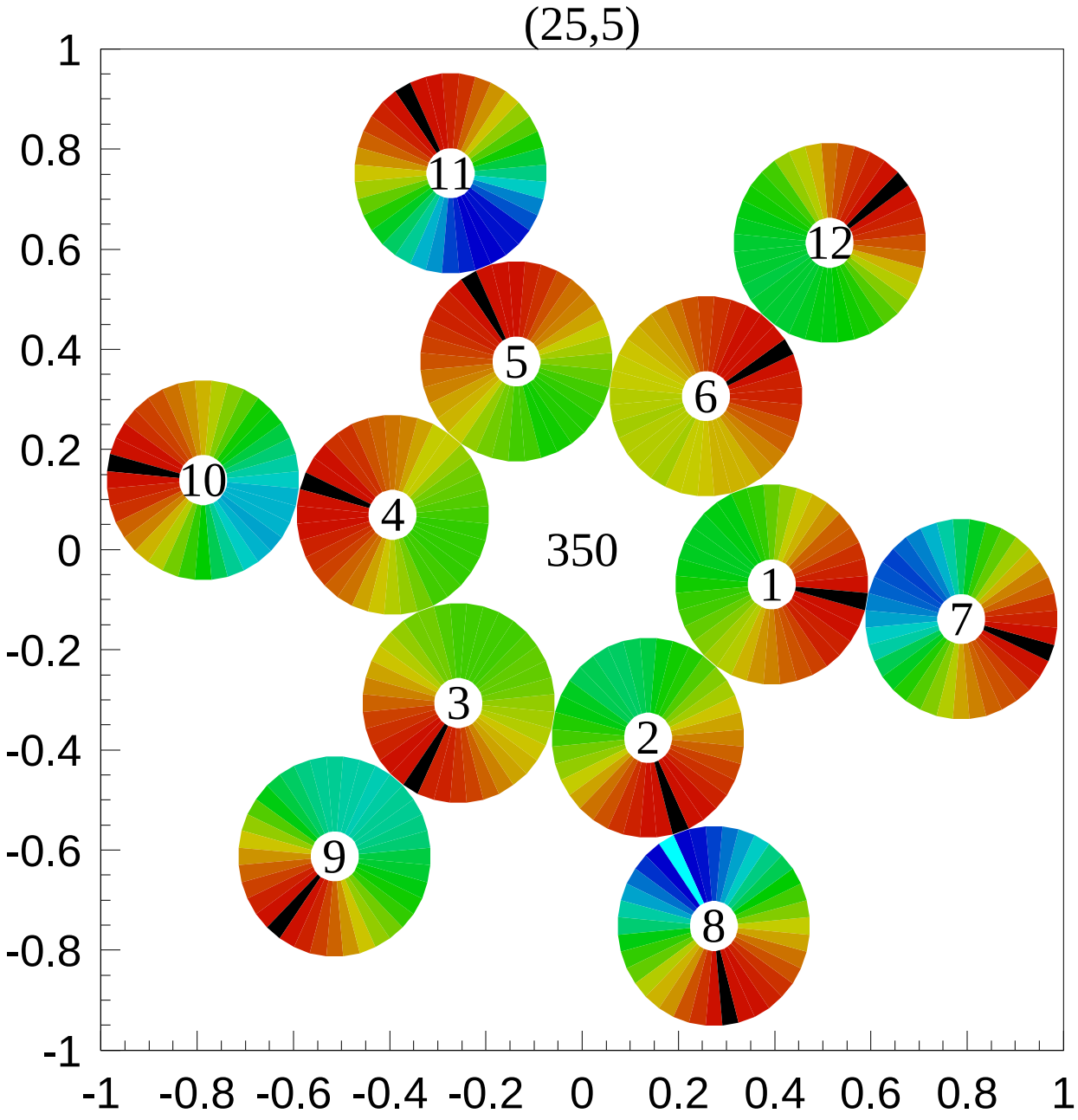

(24,49)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

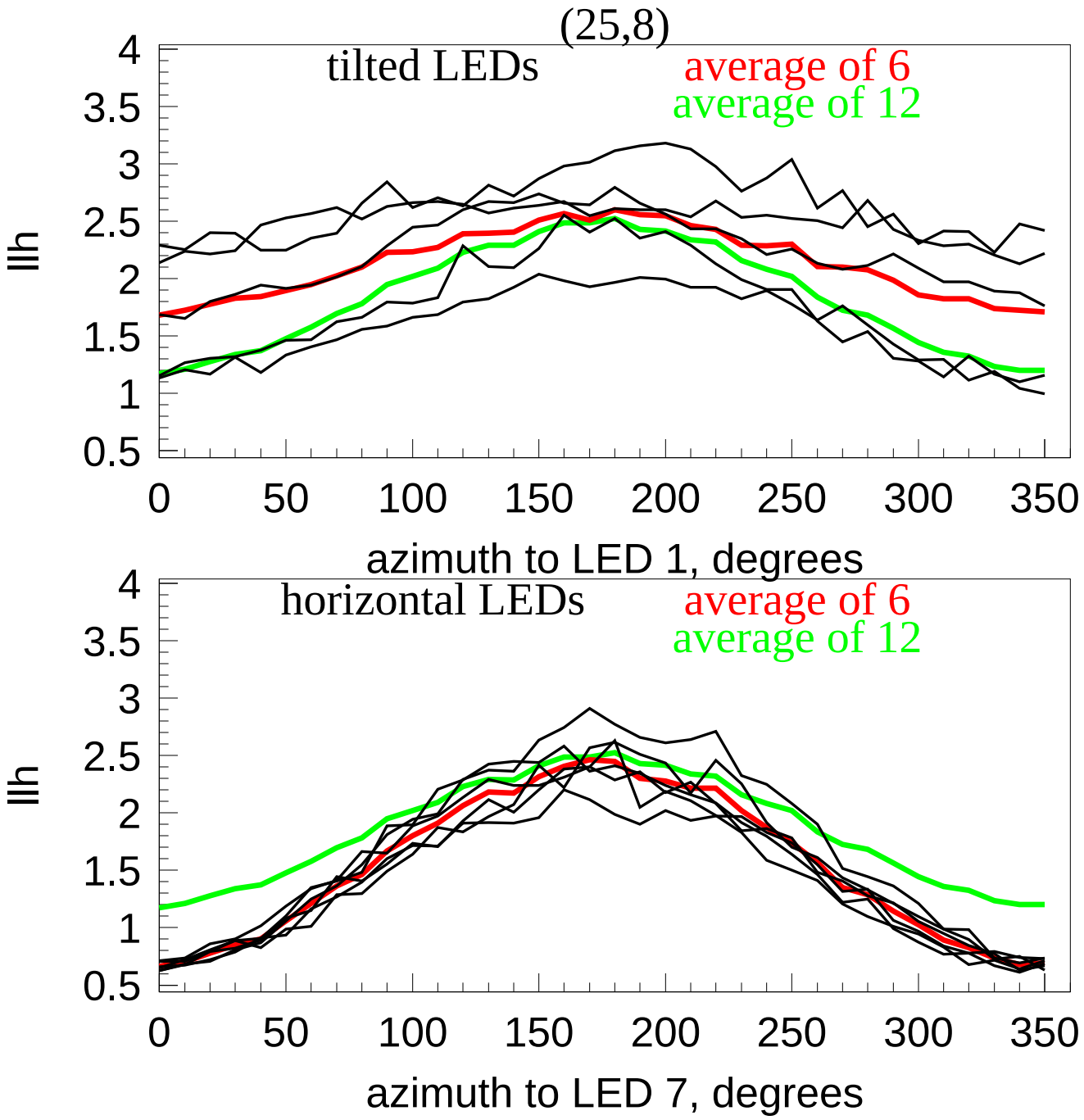

(24,49)
290
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

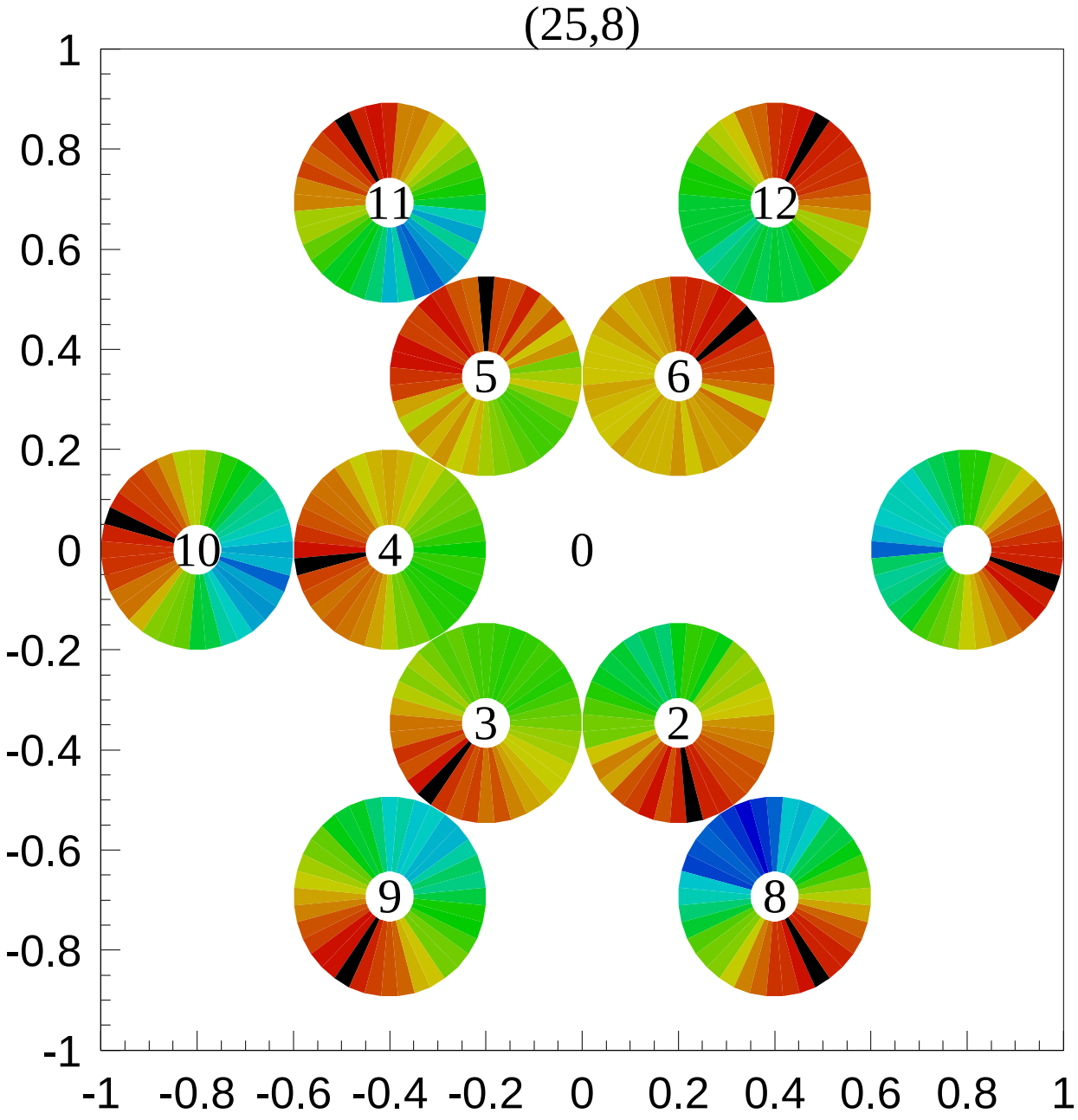

(25,2)
tilted LEDs
average of 6
average of 12
Ilh
9
8
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

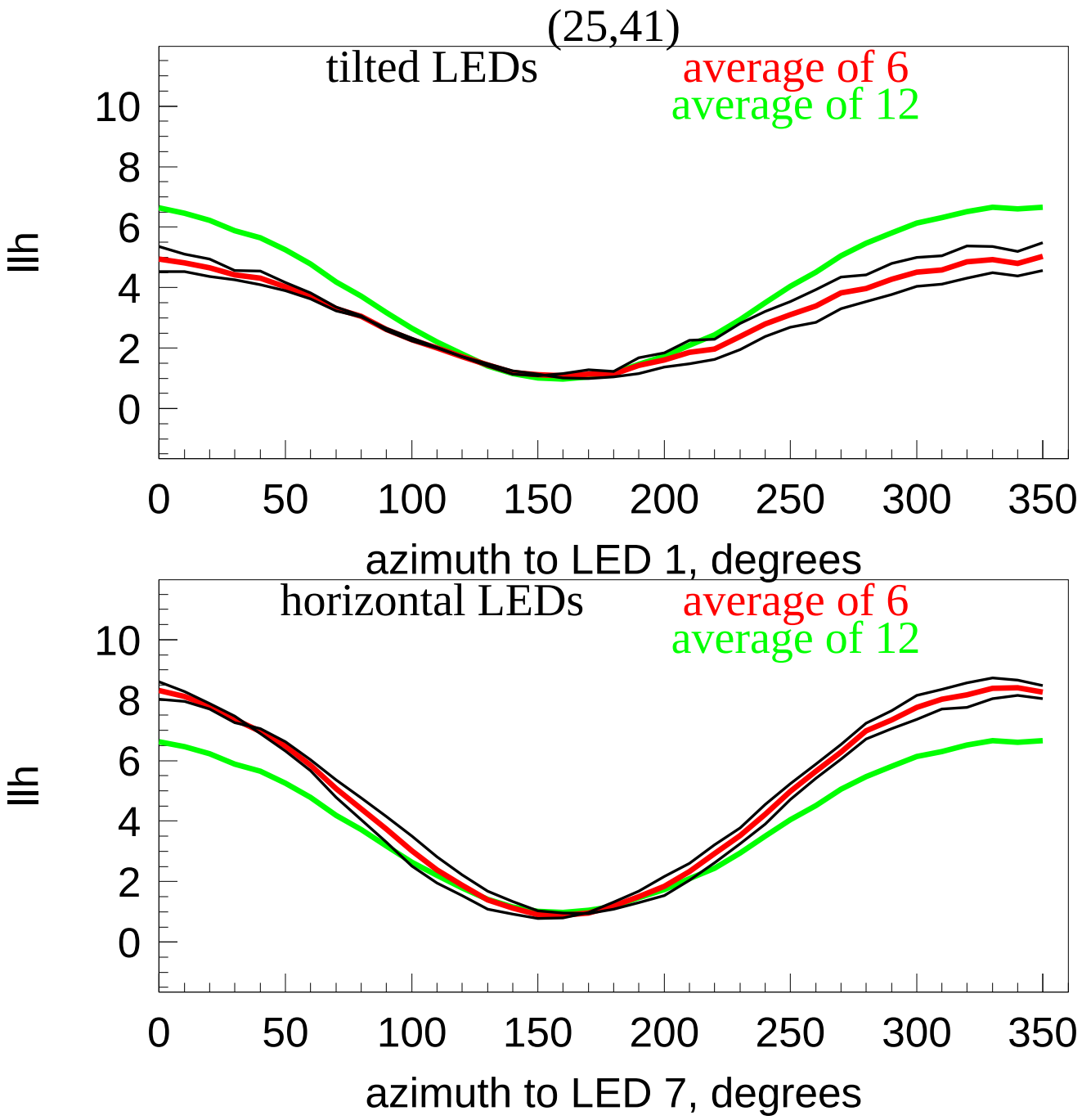

(25,2)
290
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

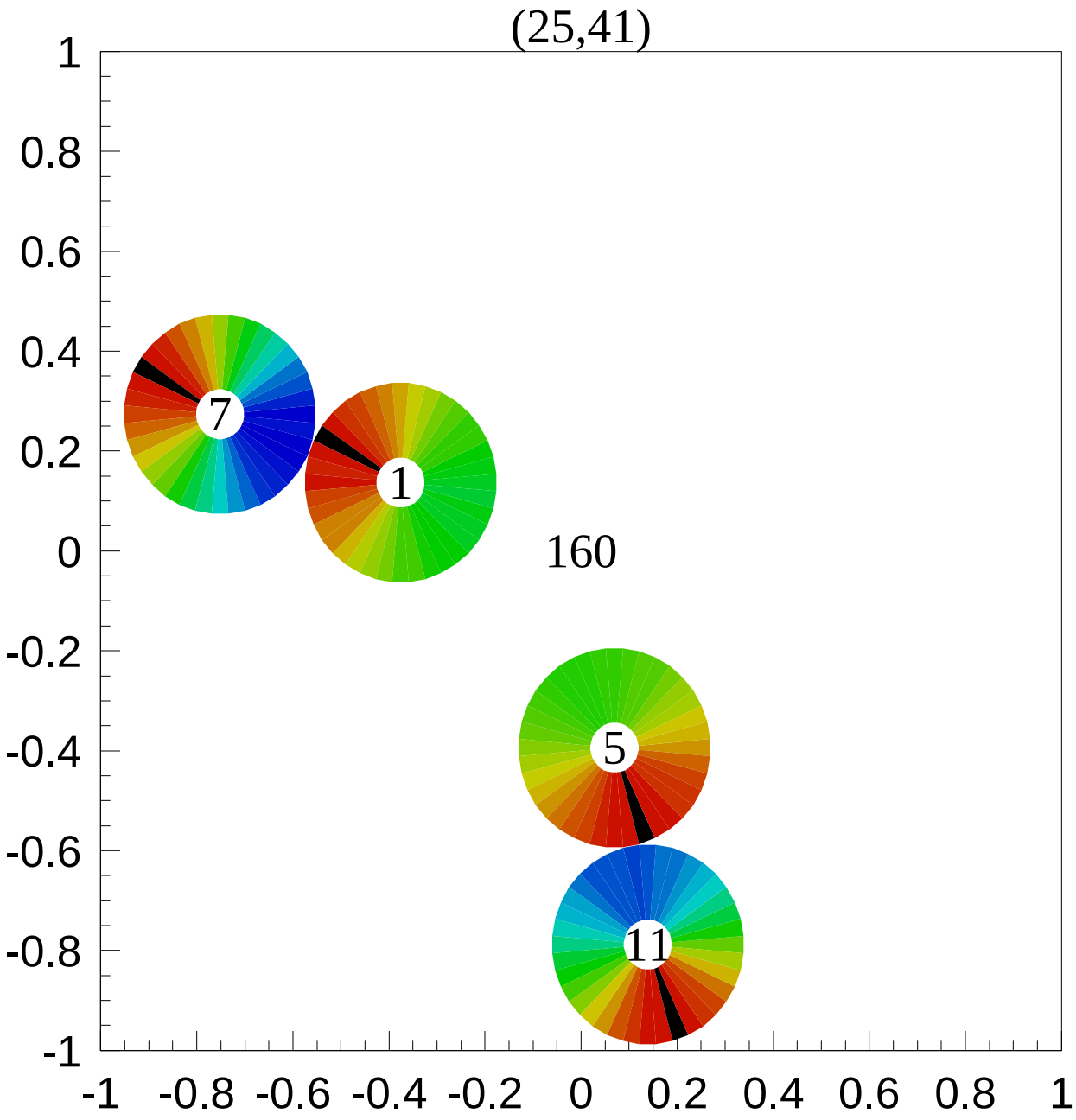

(25,5)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

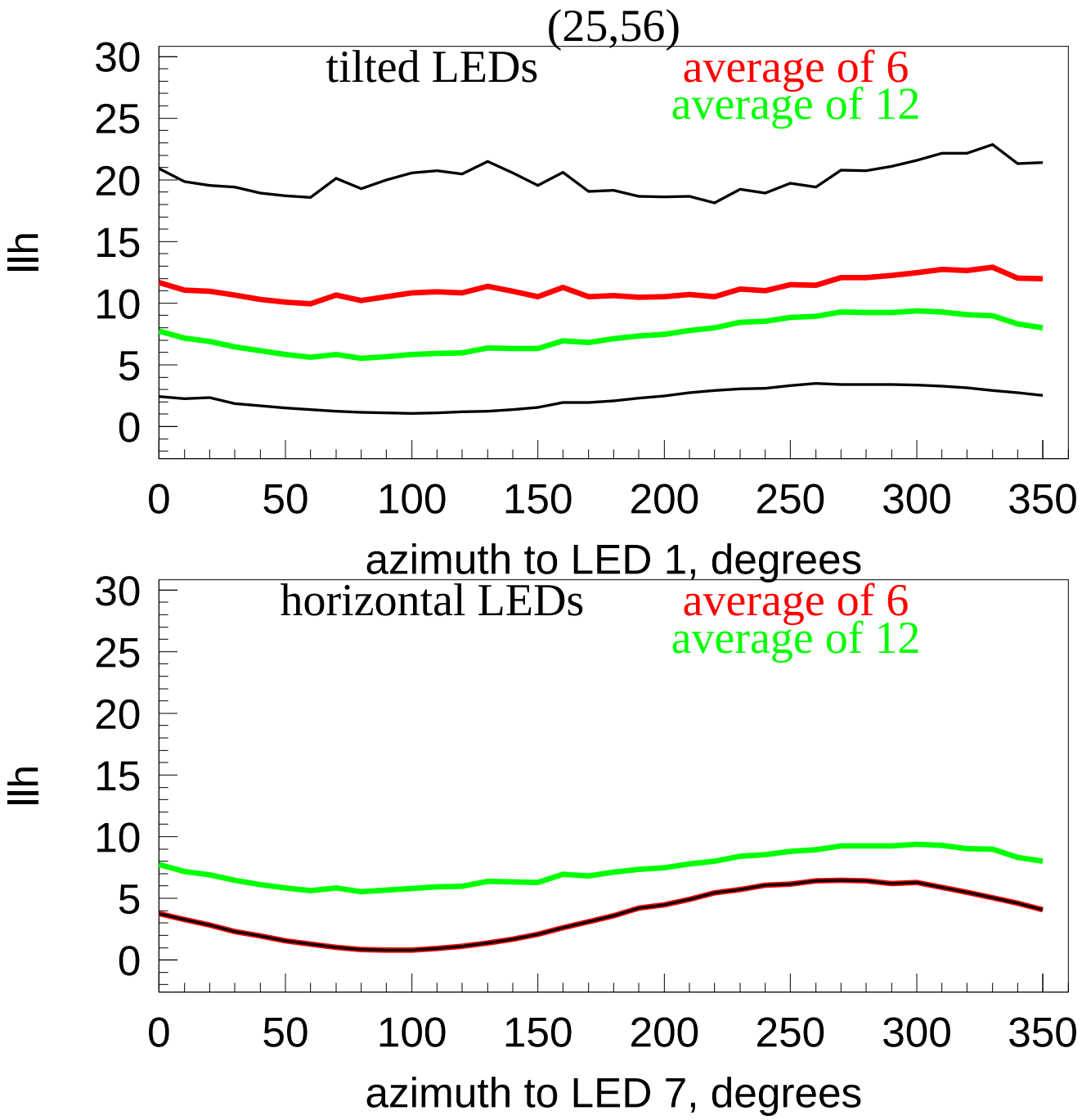

(25,5)
350
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

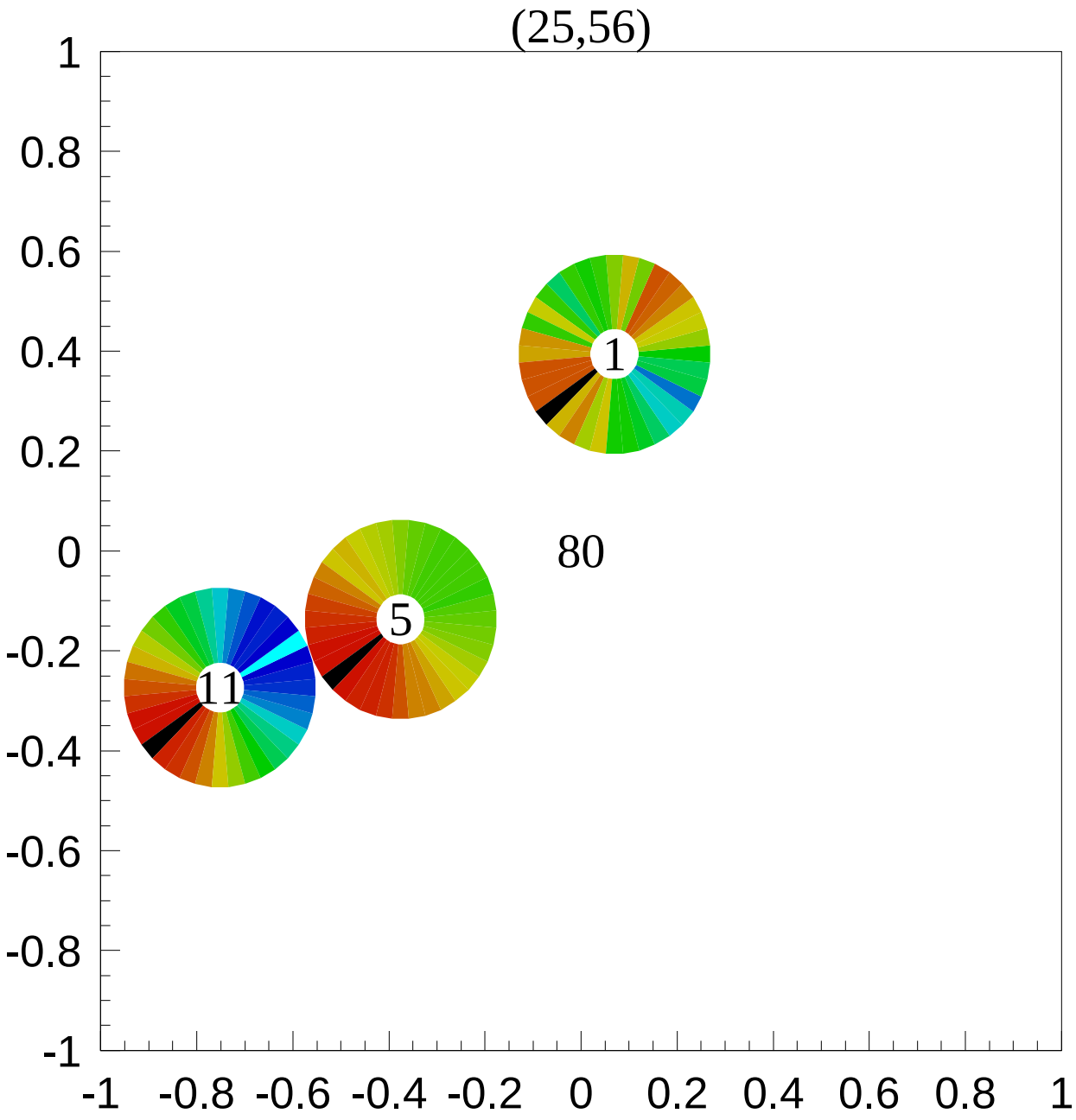

(25,8)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

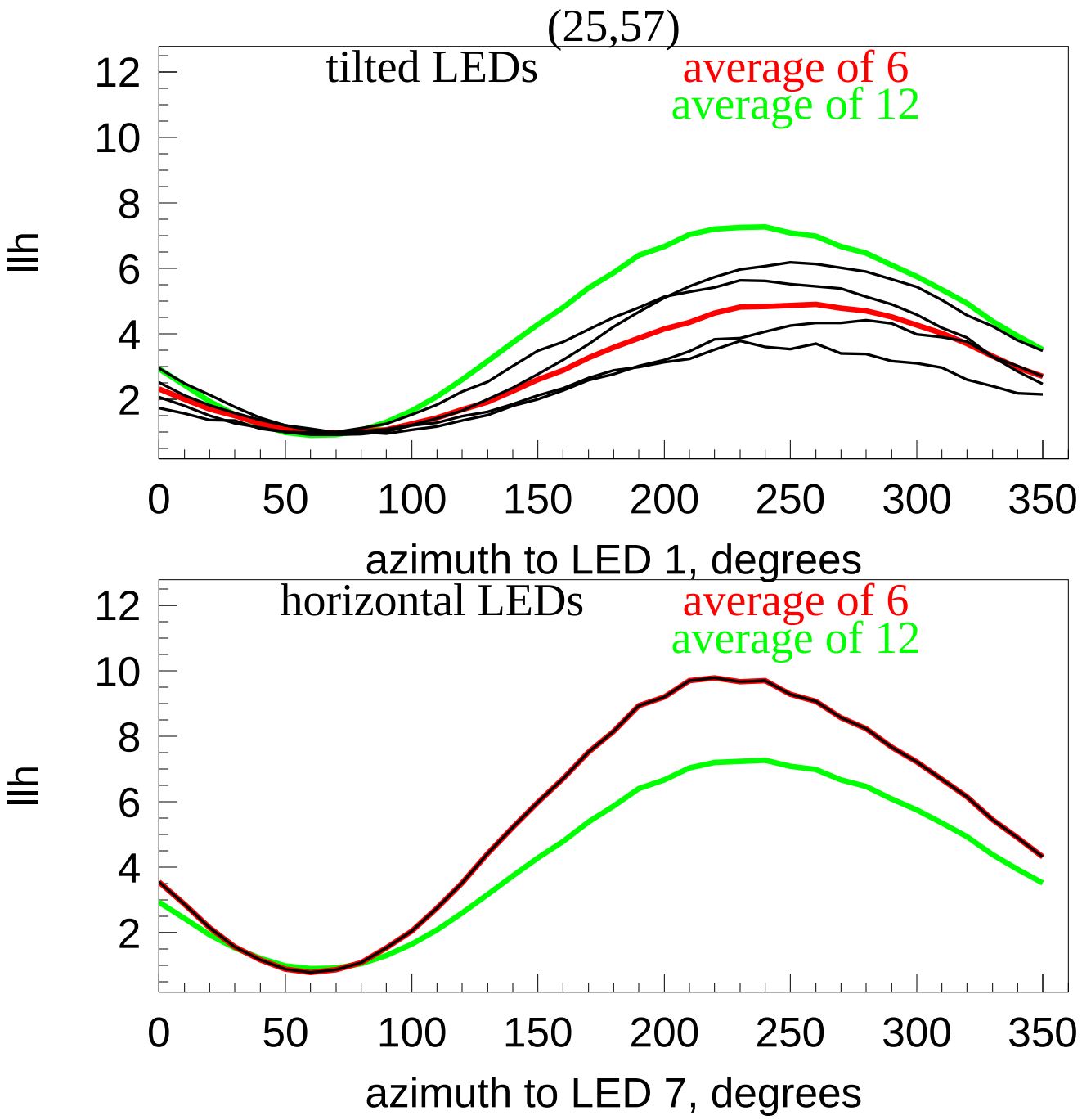

(25,8)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
12
5
6
10
4
0
3
2
9
8

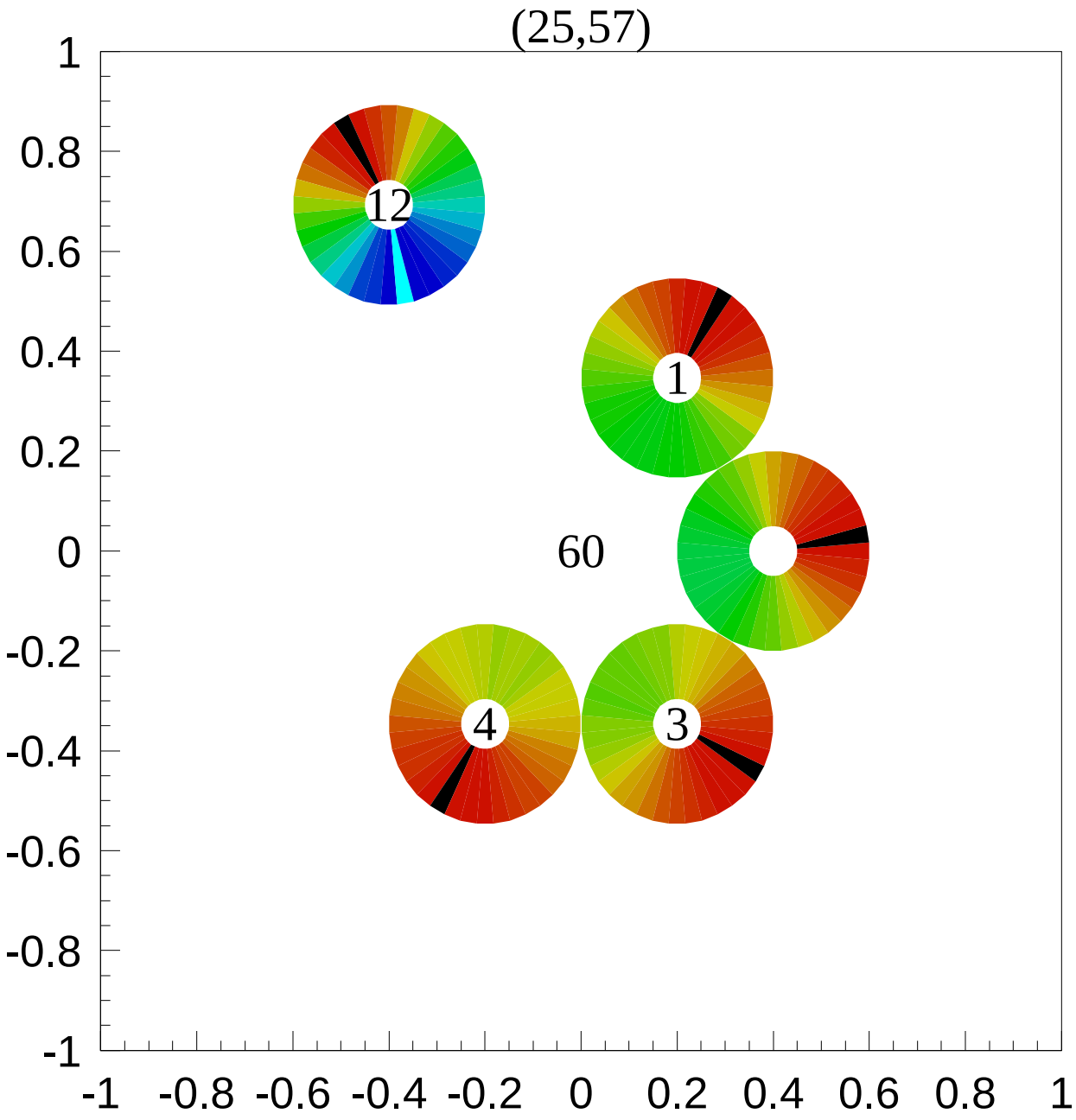

(25,41)
tilted LEDs
average of 6
average of 12
Ilh
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

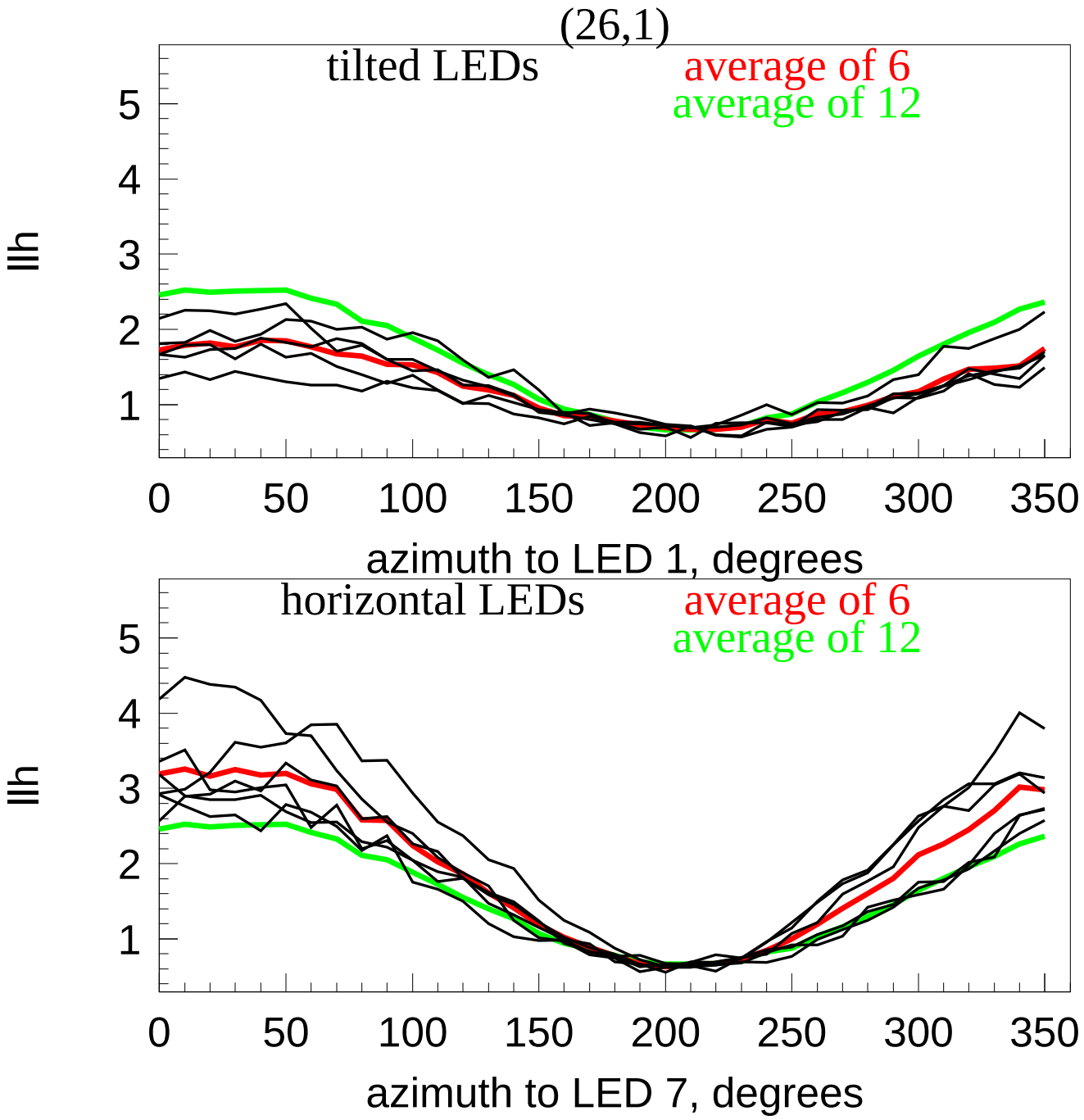

(25,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
160
5
11

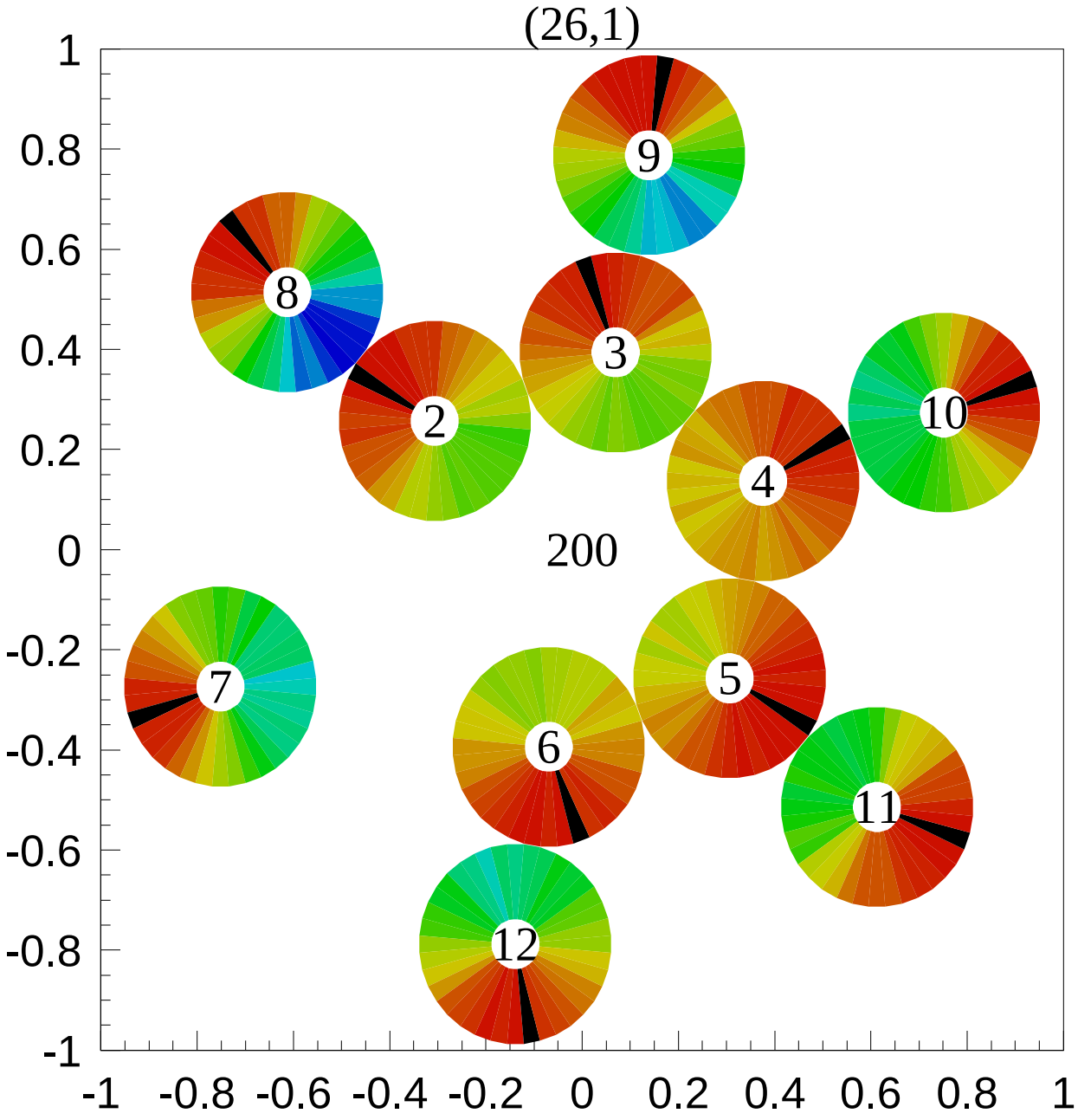

(25,56)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

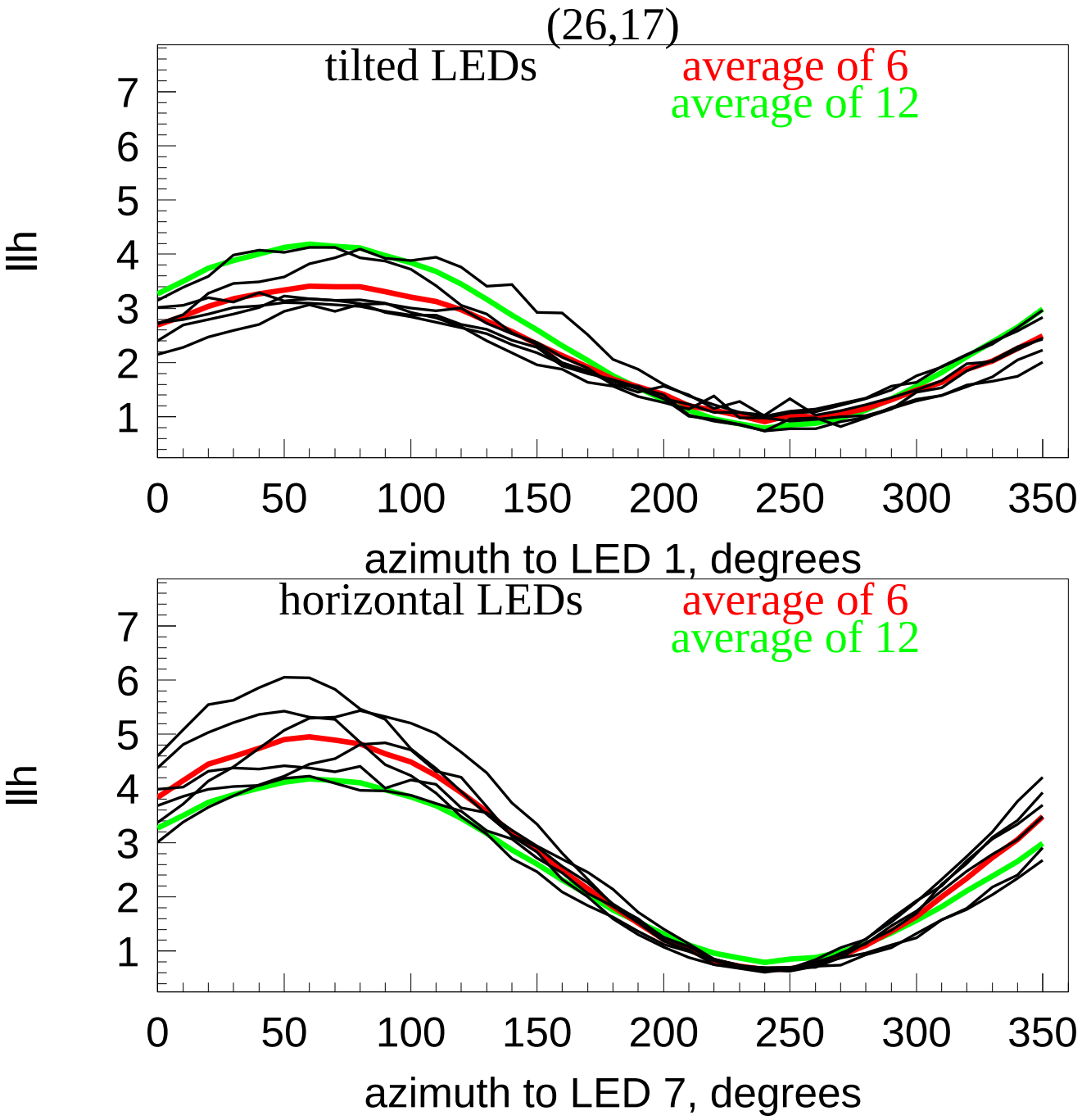

(25,56)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
1
80
5
11

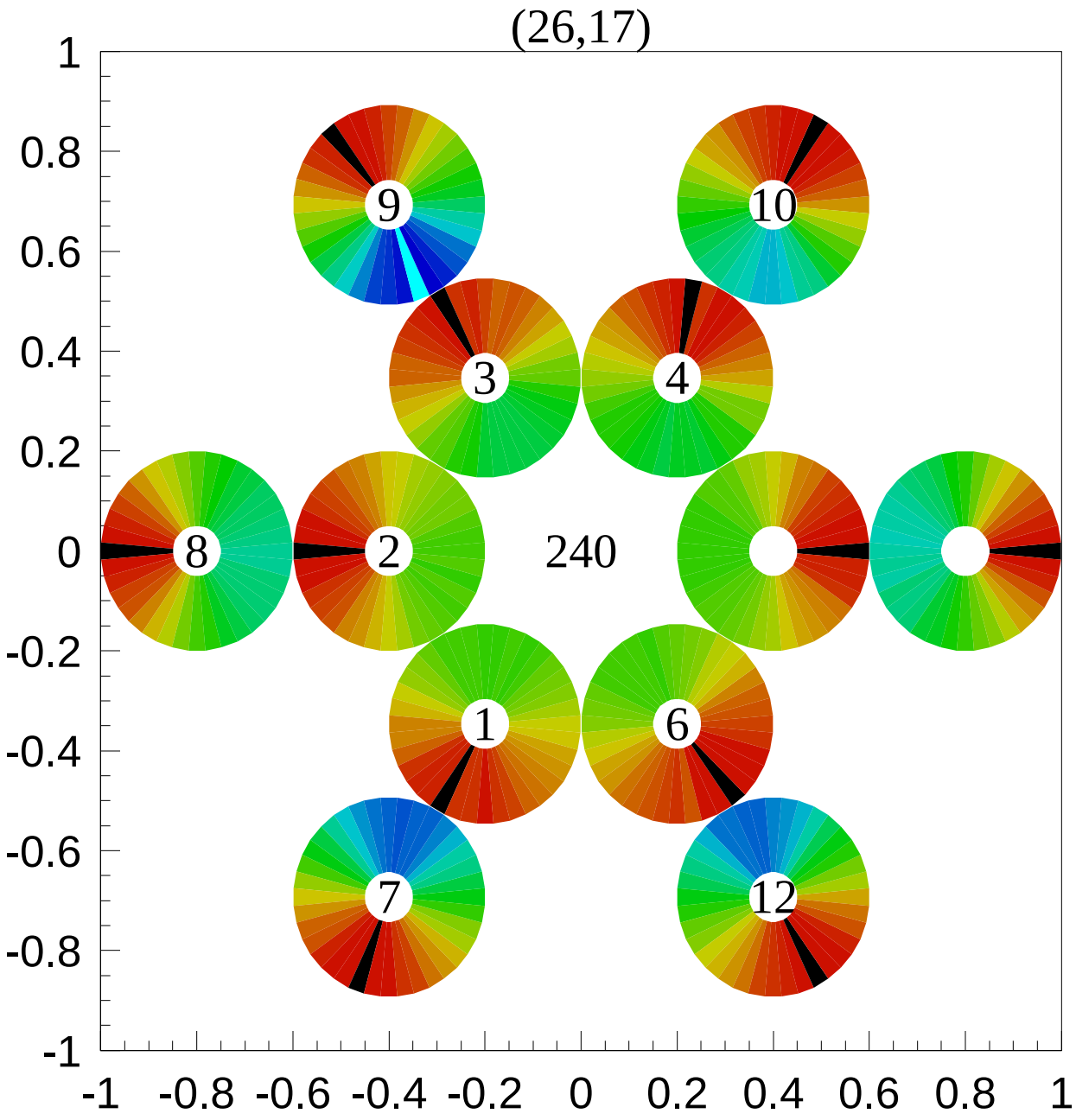

(25,57)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

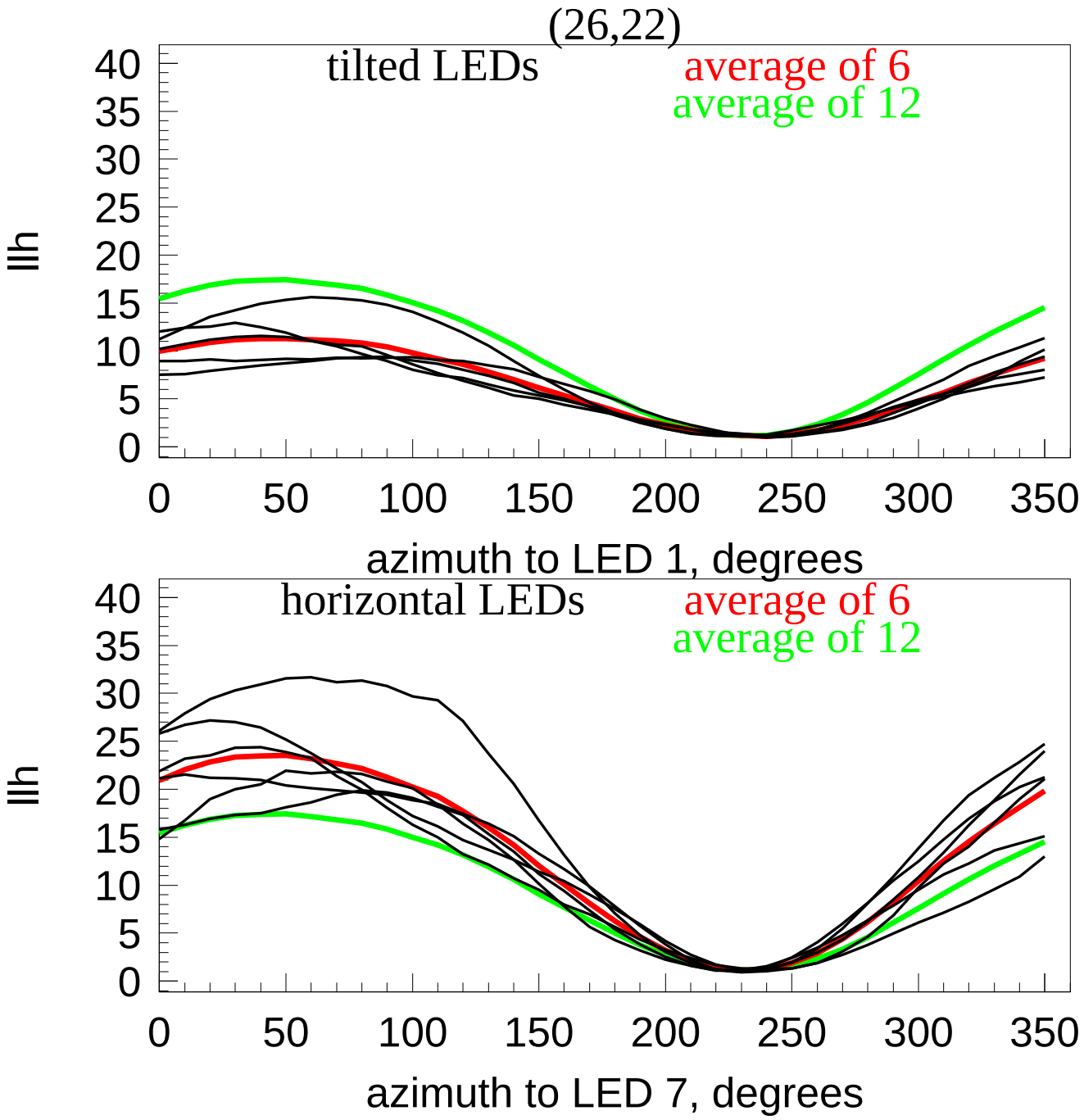

(25,57)
12
1
60
4
3
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

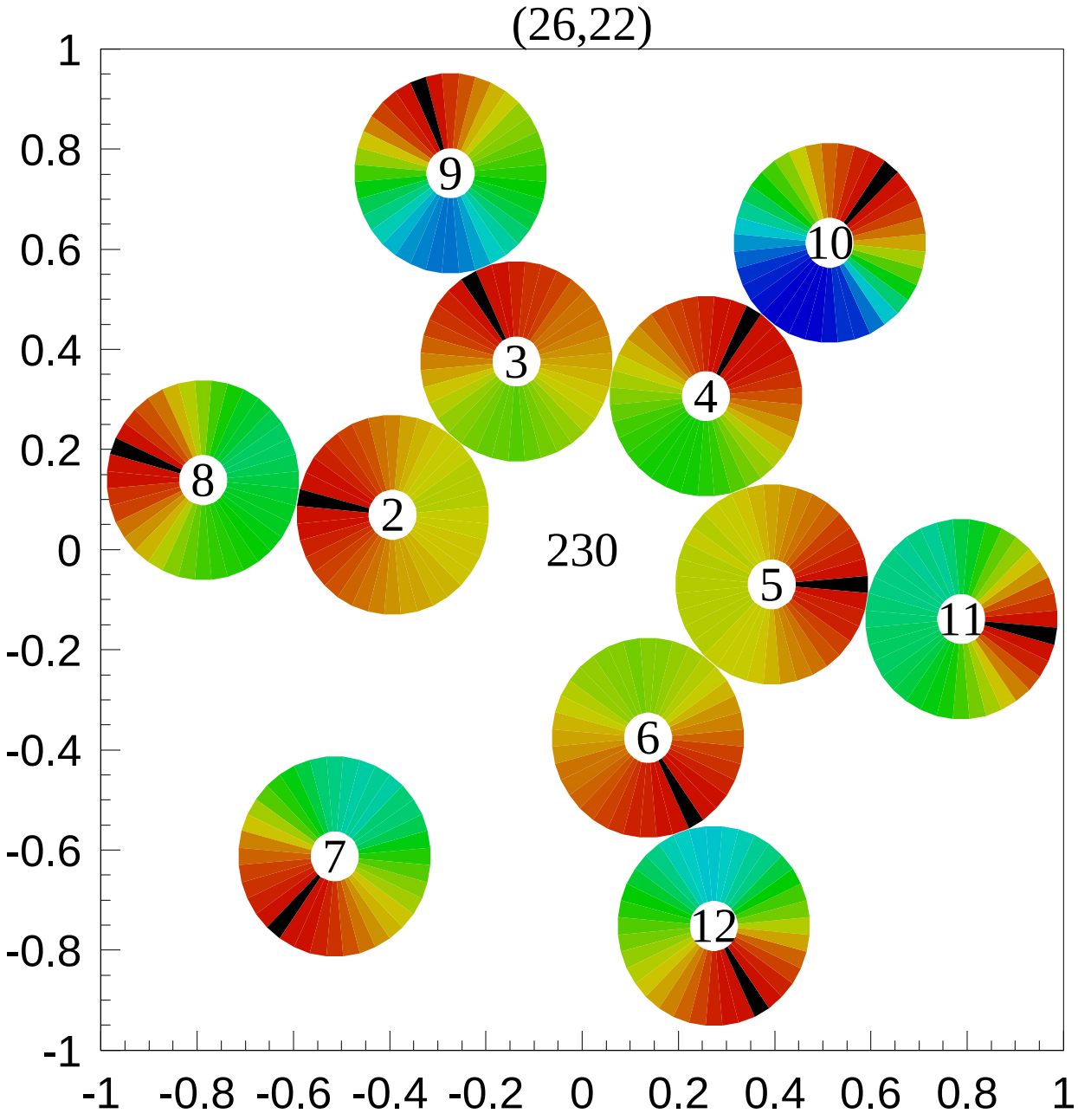

(26,1)
tilted LEDs
average of 6
average of 12
IIh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
IIh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

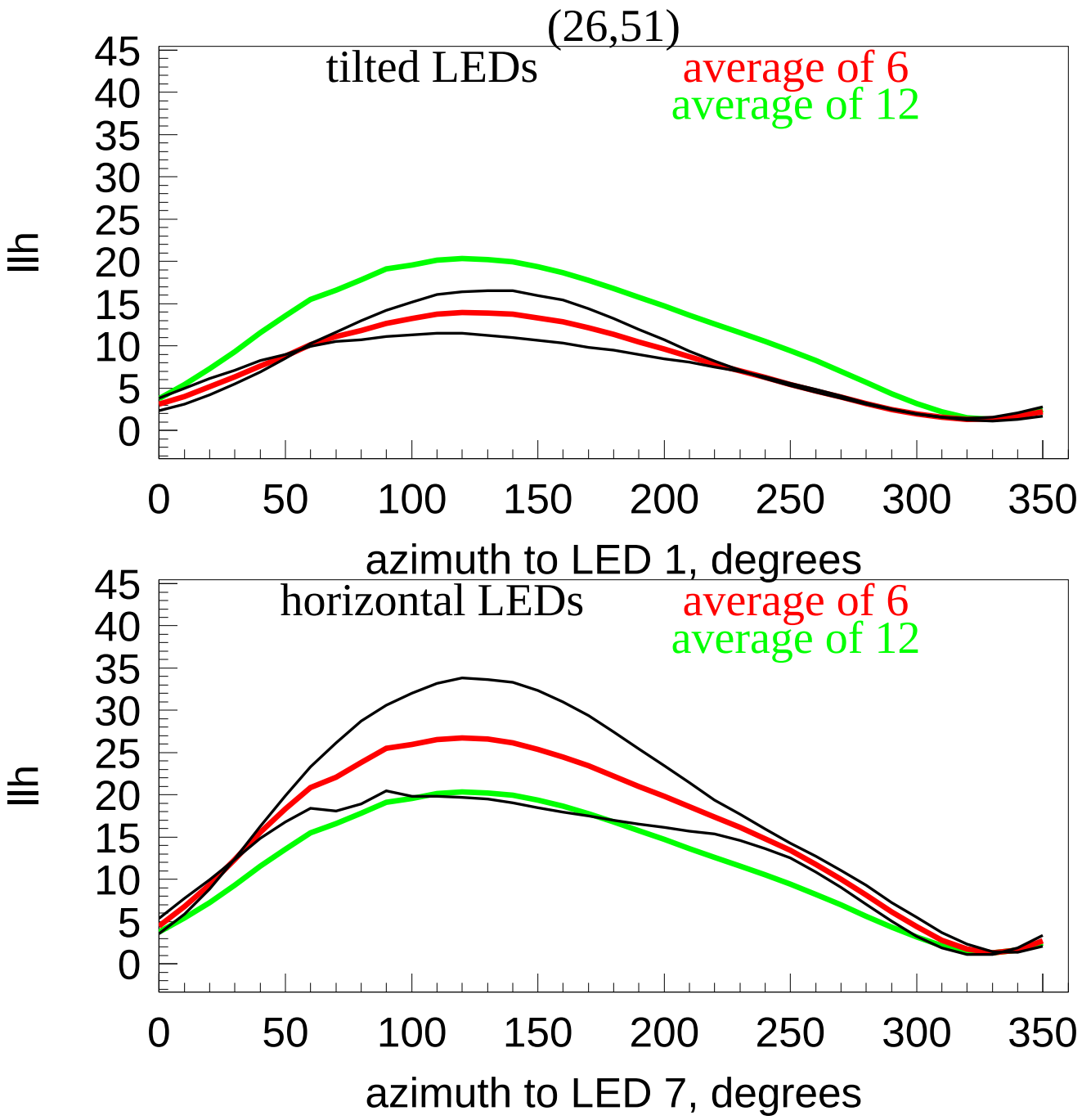

(26,1)
200
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

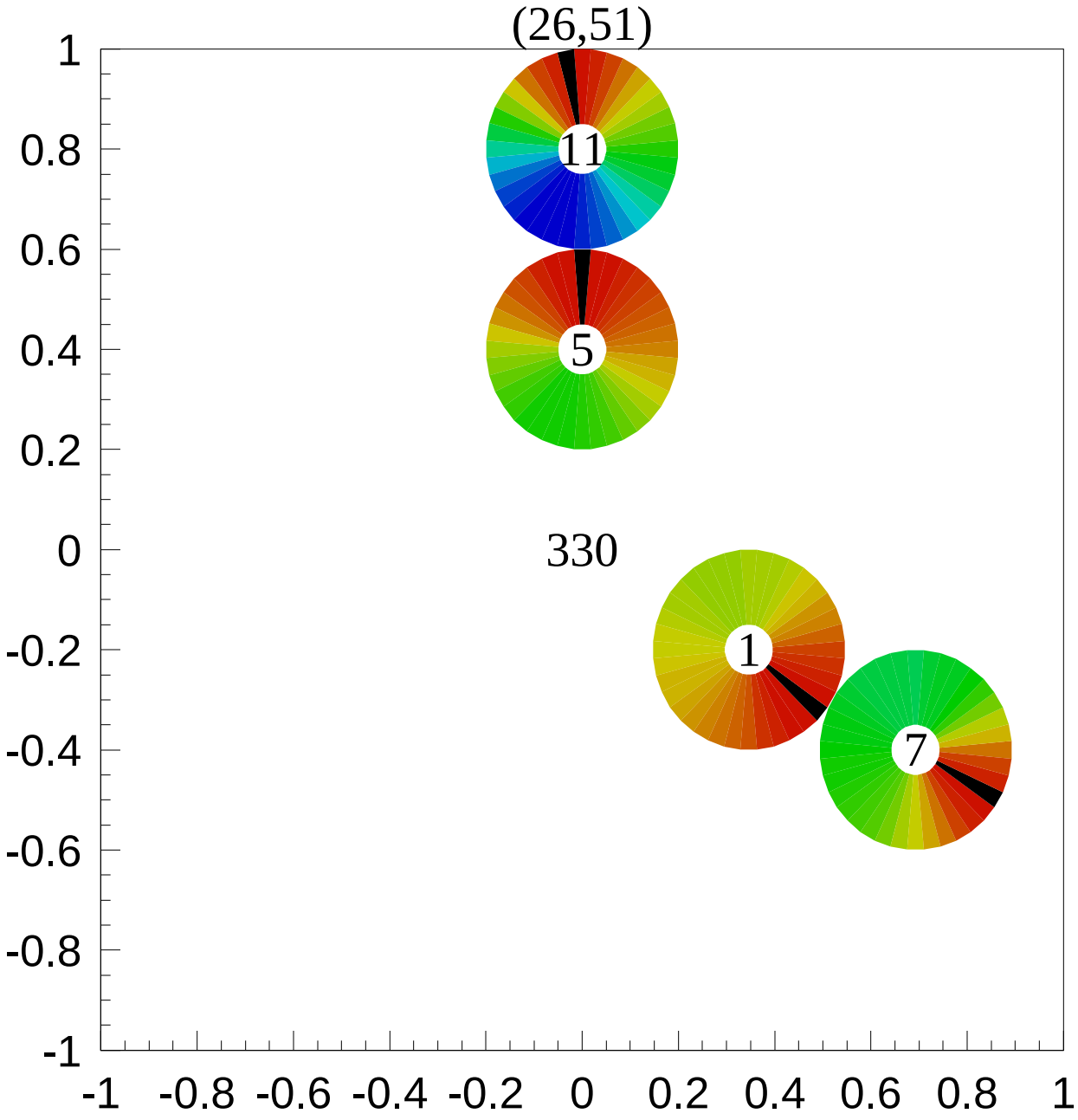

(26,17)
tilted LEDs
average of 6
average of 12
Ilh
1
2
3
4
5
6
7
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

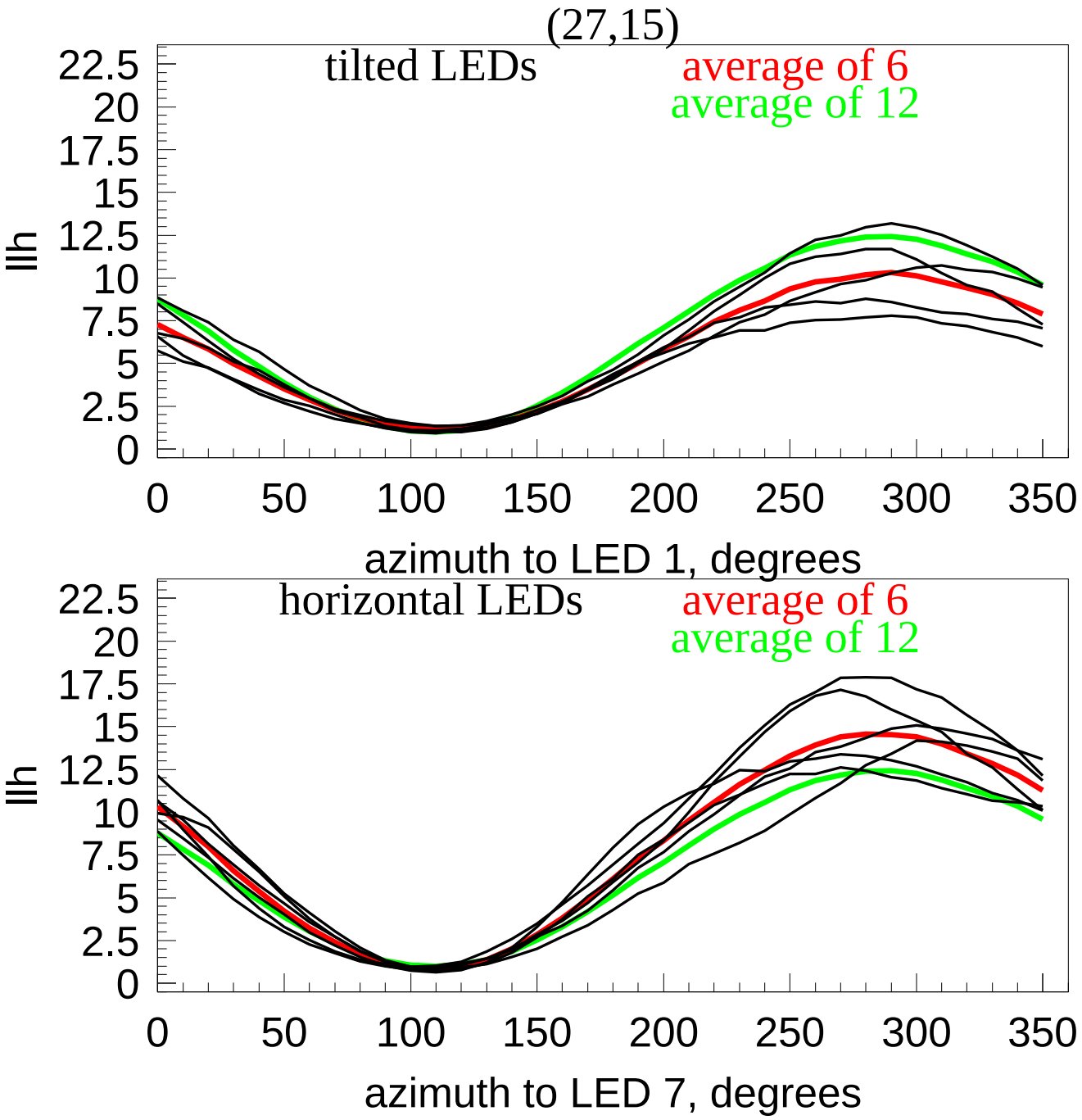

(26,17)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
10
3
4
8
2
240
1
6
7
12

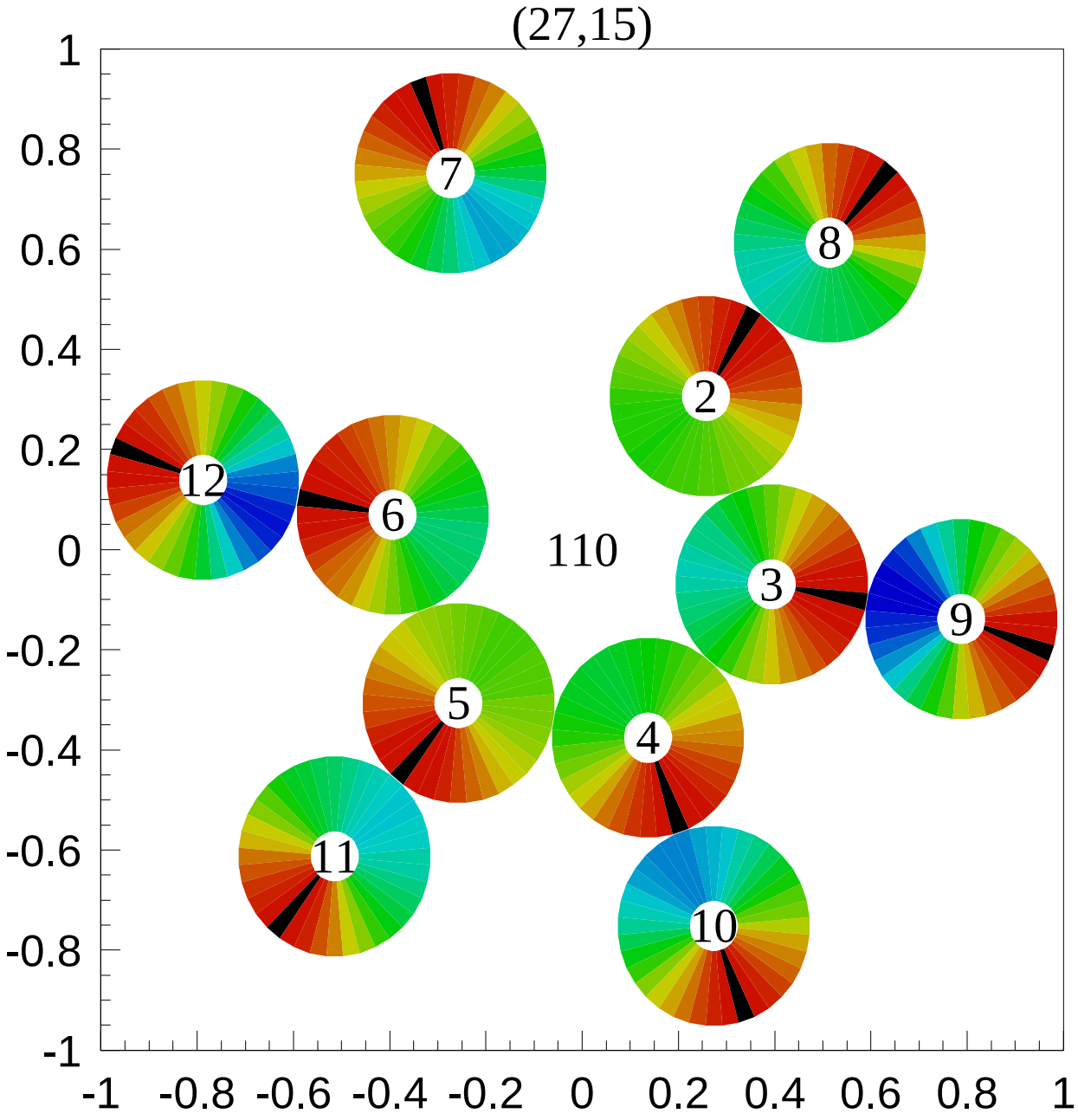

(26,22)
tilted LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

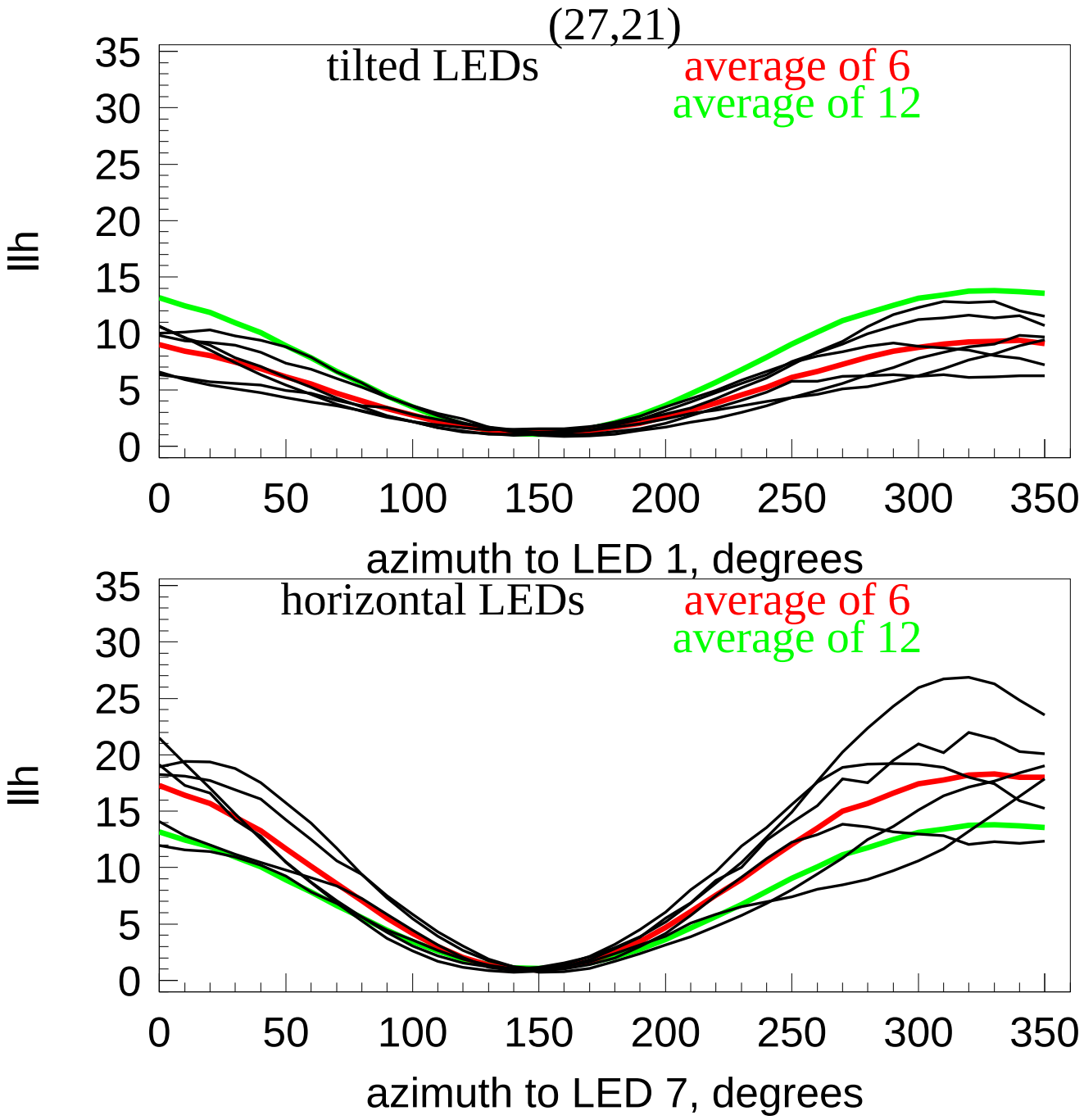

(26,22)
9
10
3
4
8
2
230
5
11
6
7
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1 -0.8 -0.6 -0.4 -0.2 0 0.2 0.4 0.6 0.8 1

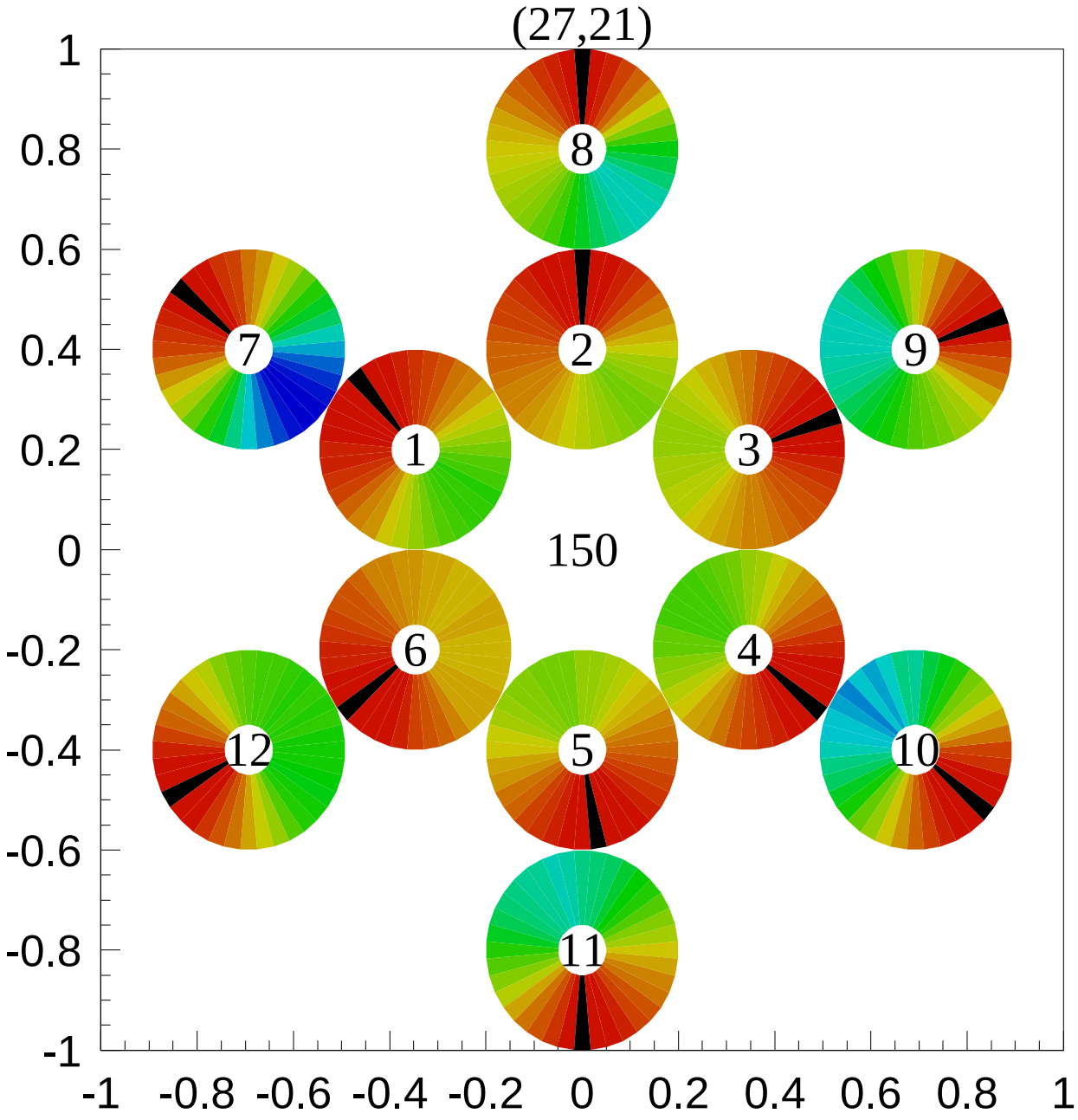

(26,51)
tilted LEDs
average of 6
average of 12
Ilh
45
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

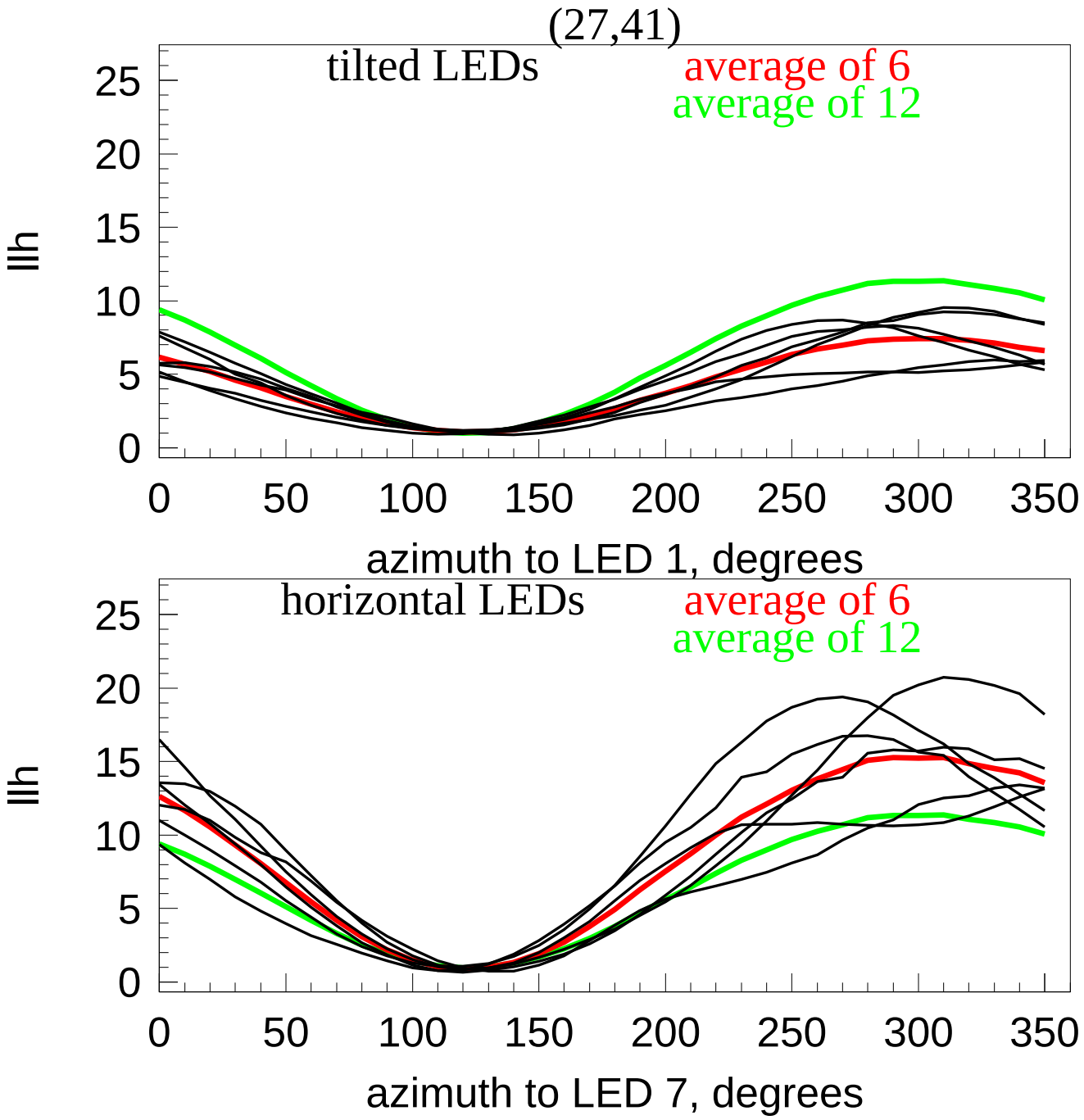

(26,51)
11
5
330
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

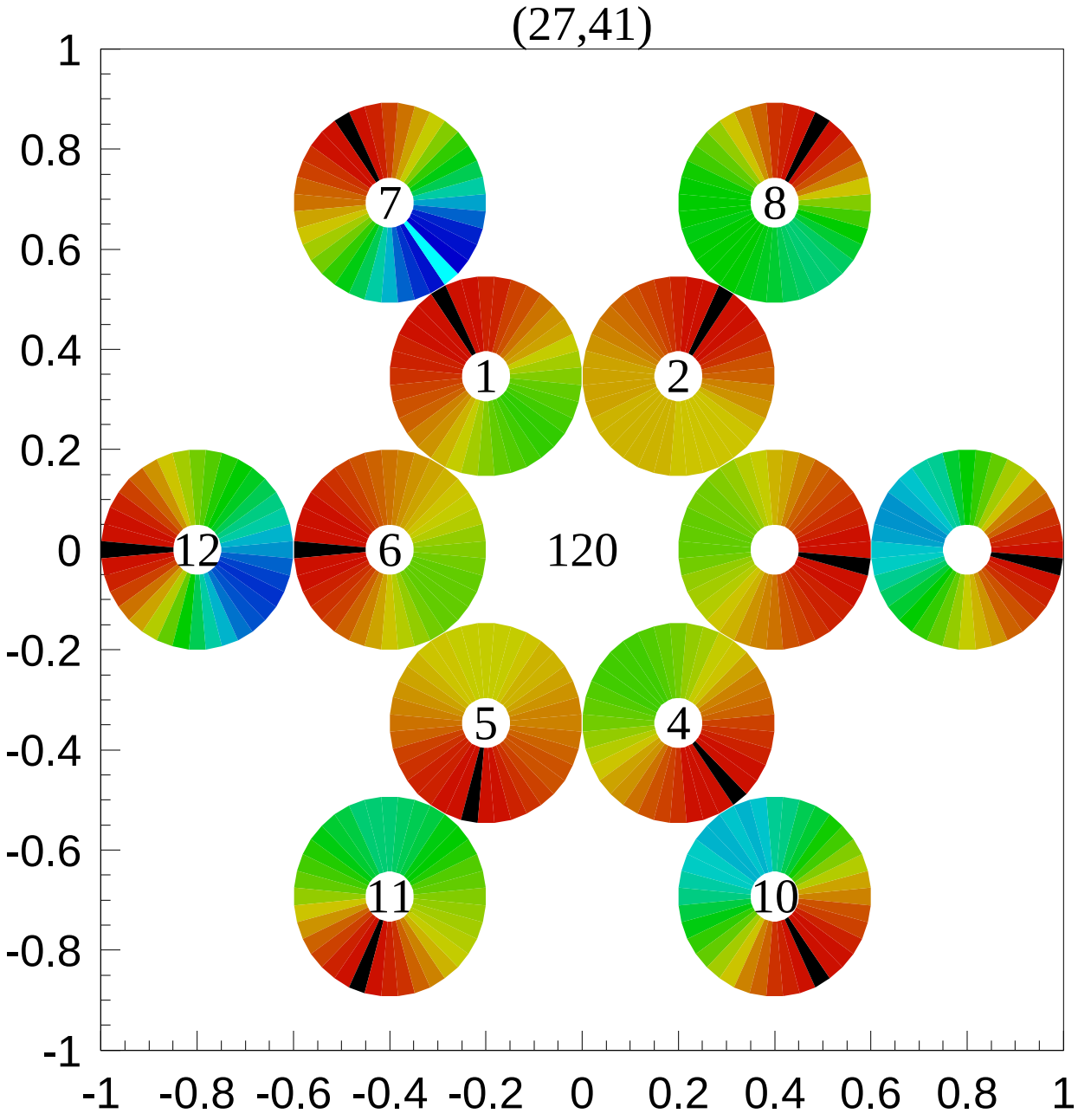

(27,15)
tilted LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

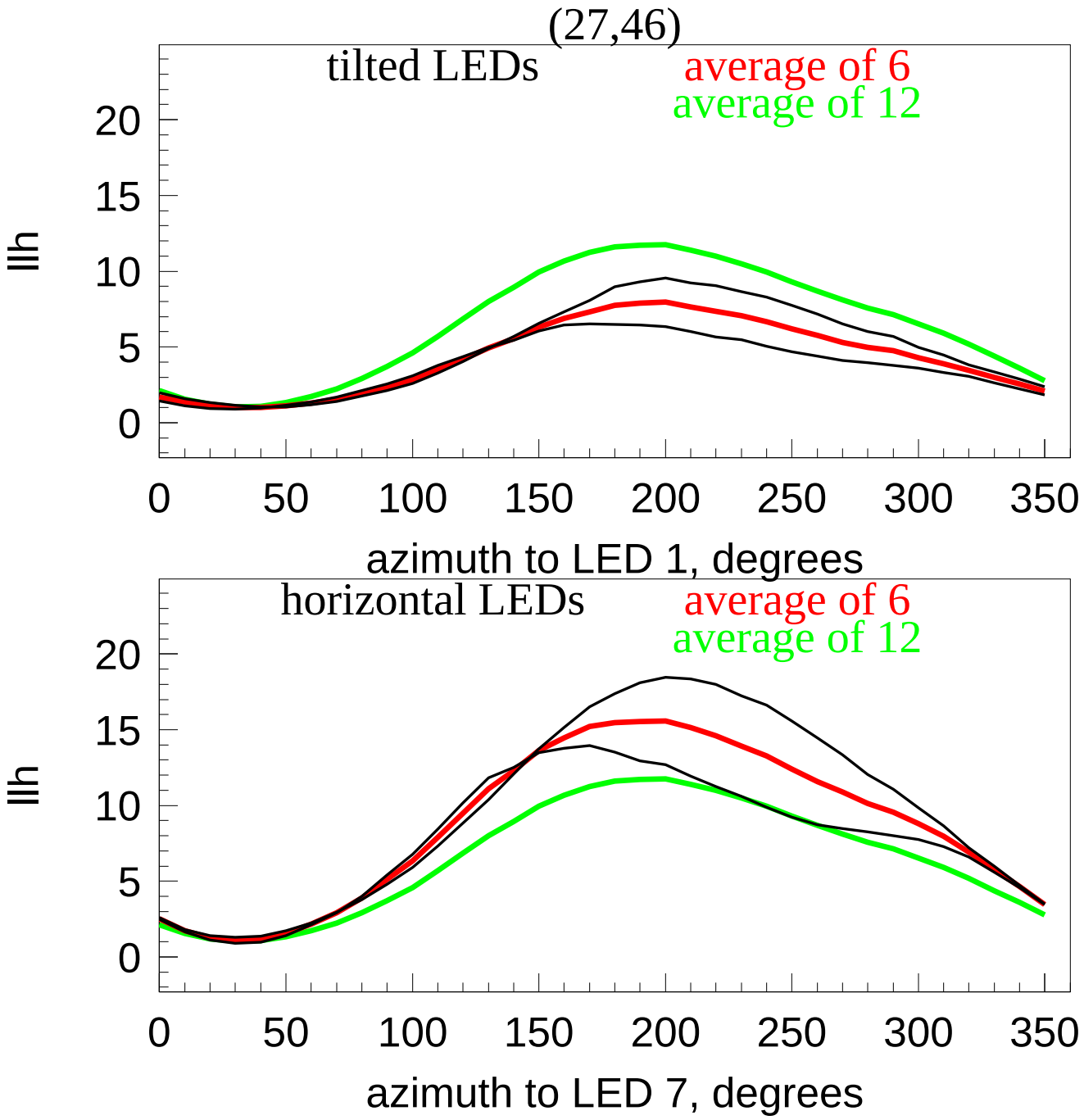

(27,15)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
2
12
6
110
3
9
5
4
11
10

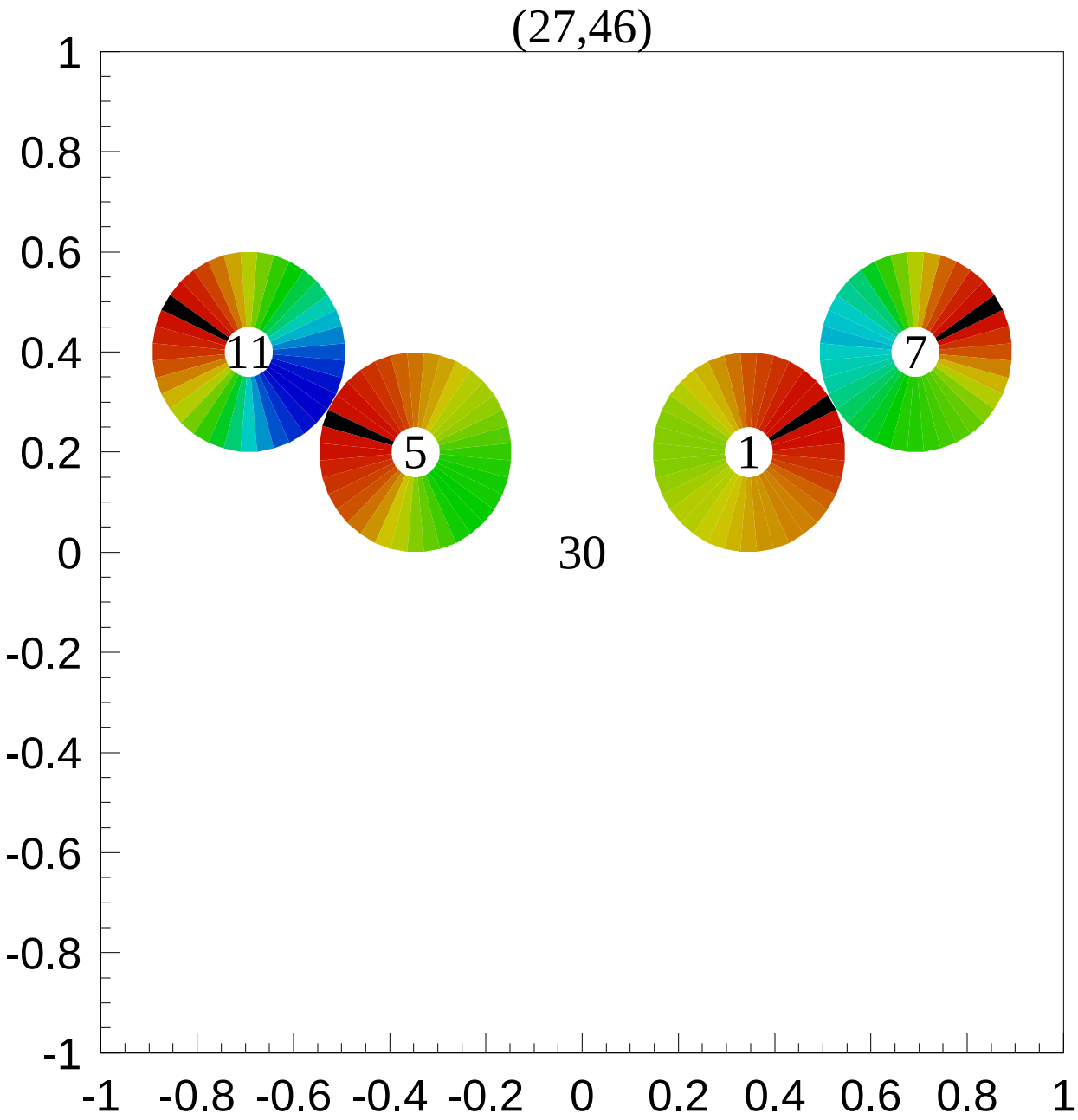

(27,21)
tilted LEDs
average of 6
average of 12
llh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

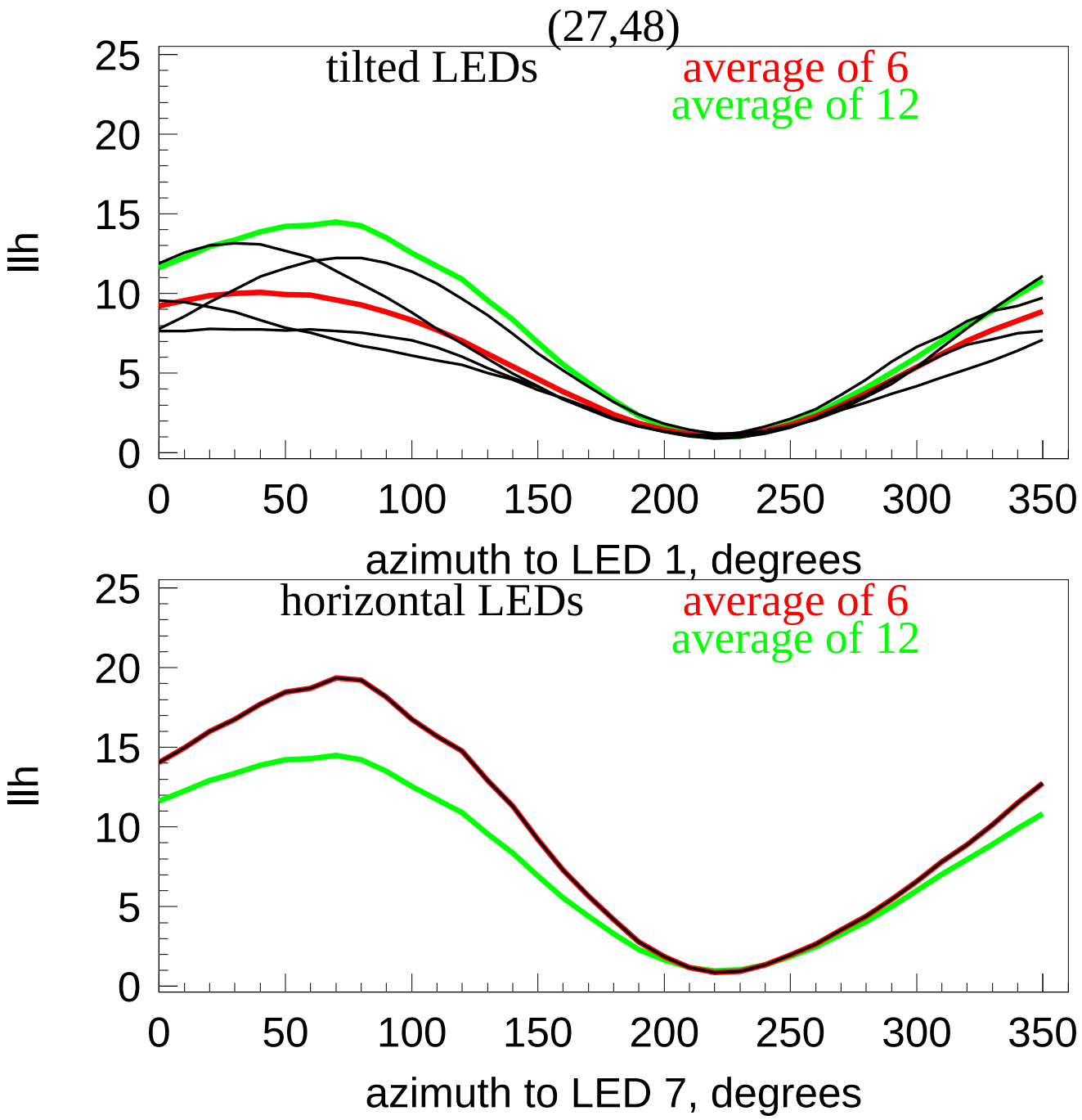

(27,21)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
7
2
9
1
3
150
6
4
12
5
10
11

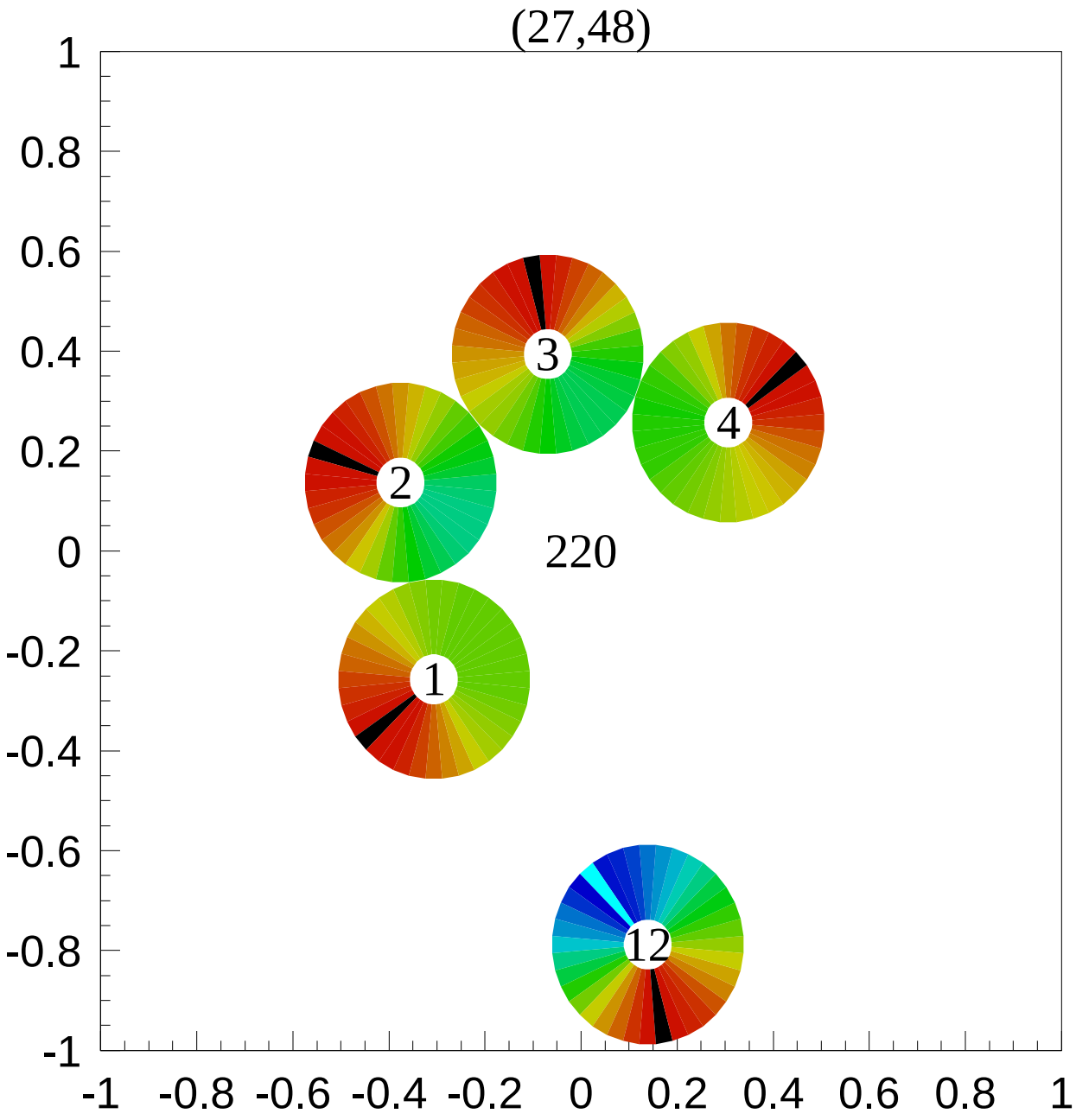

(27,41)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

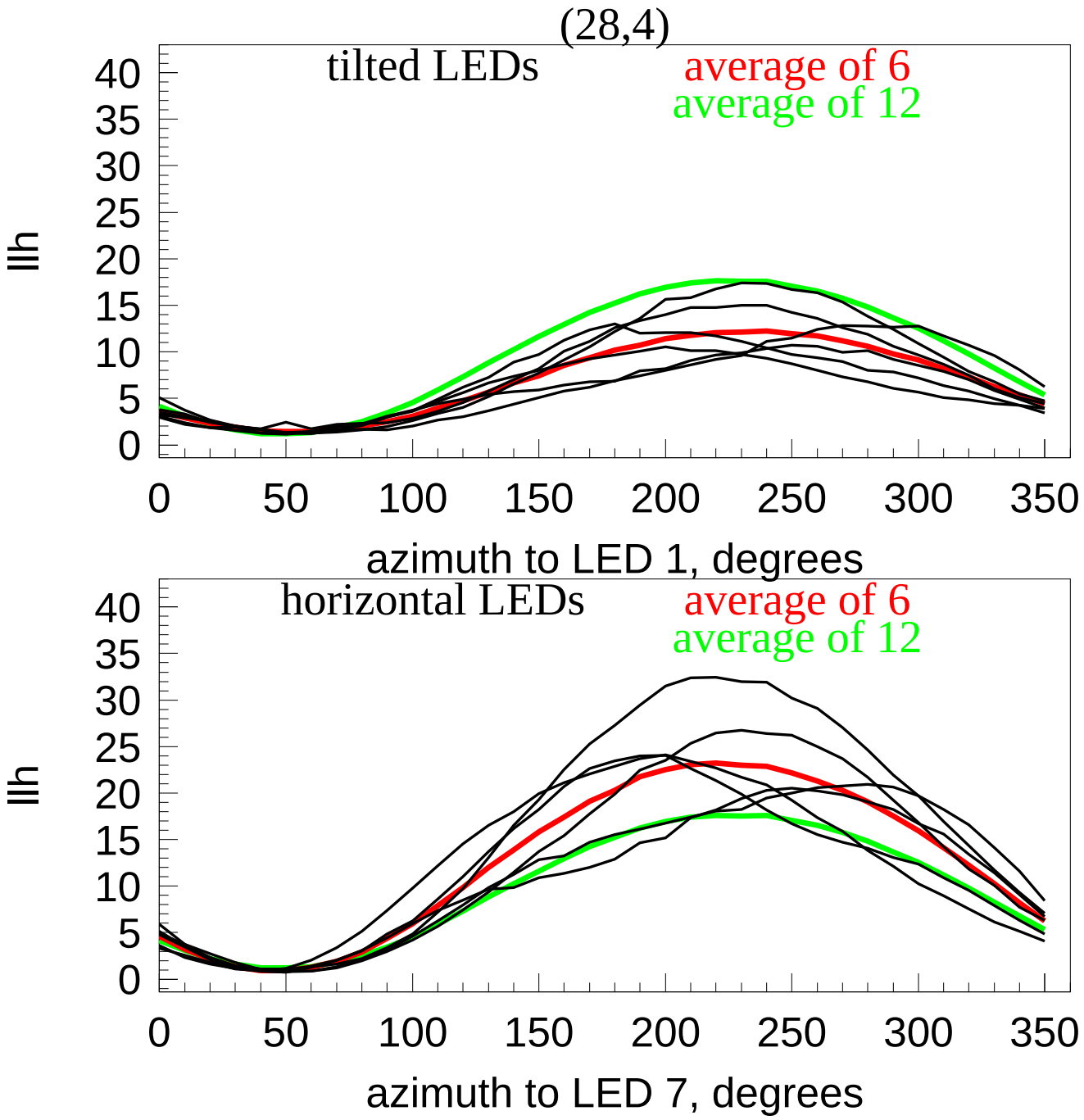

(27,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
1
2
12
6
120
5
4
11
10

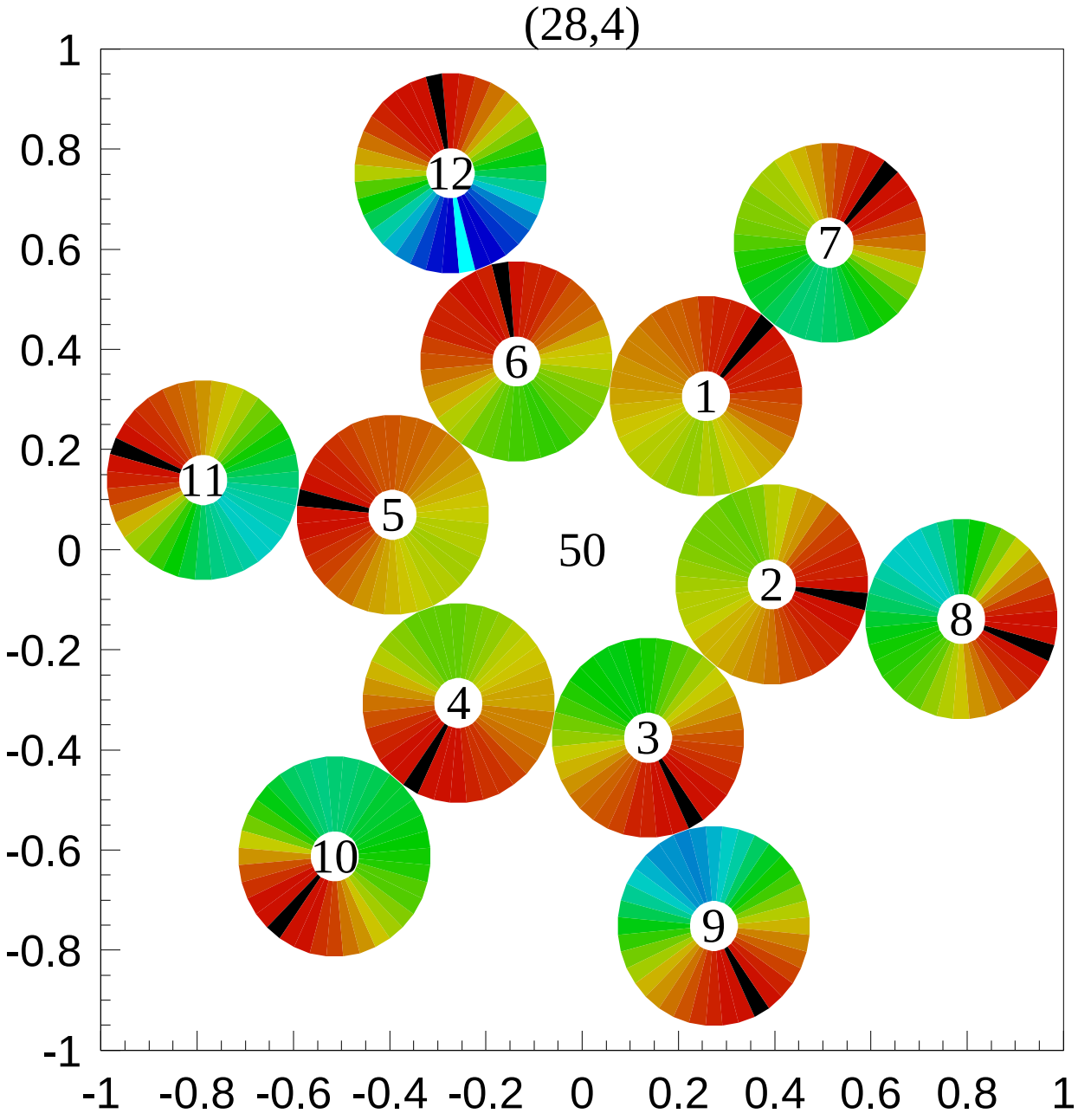

(27,46)
tilted LEDs
average of 6
average of 12
llh
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

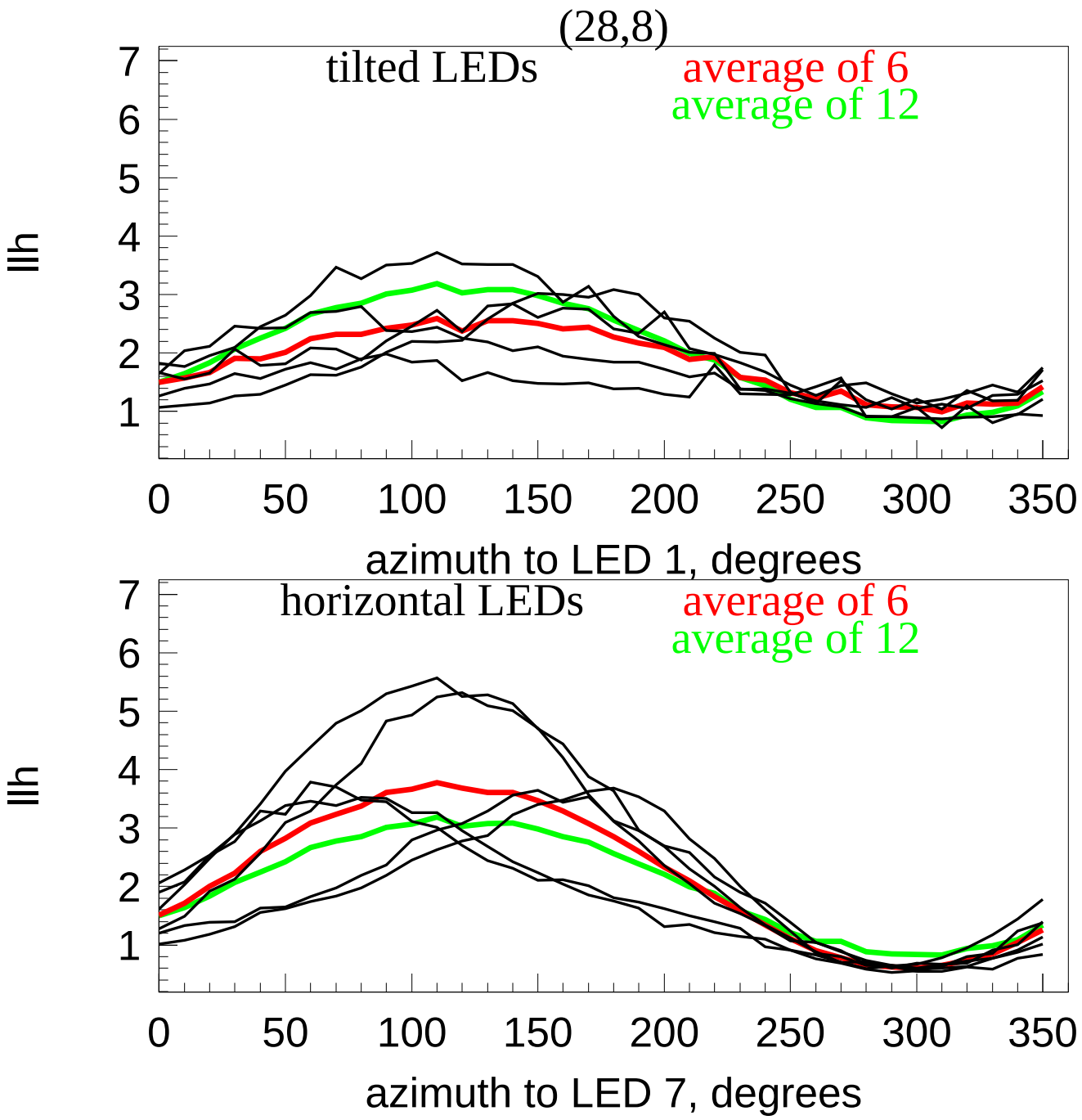

(27,46)
11
5
1
7
30
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

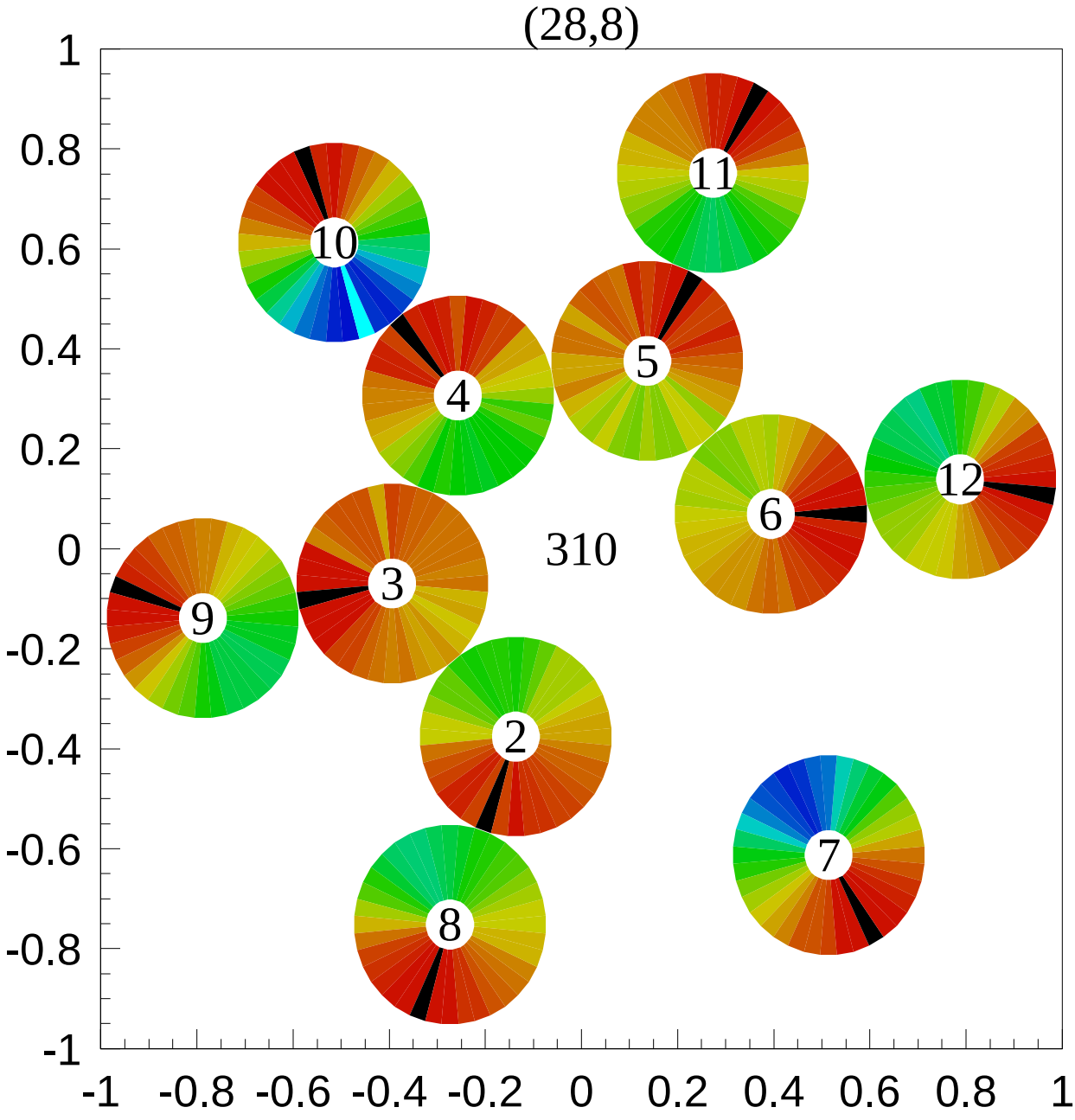

(27,48)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

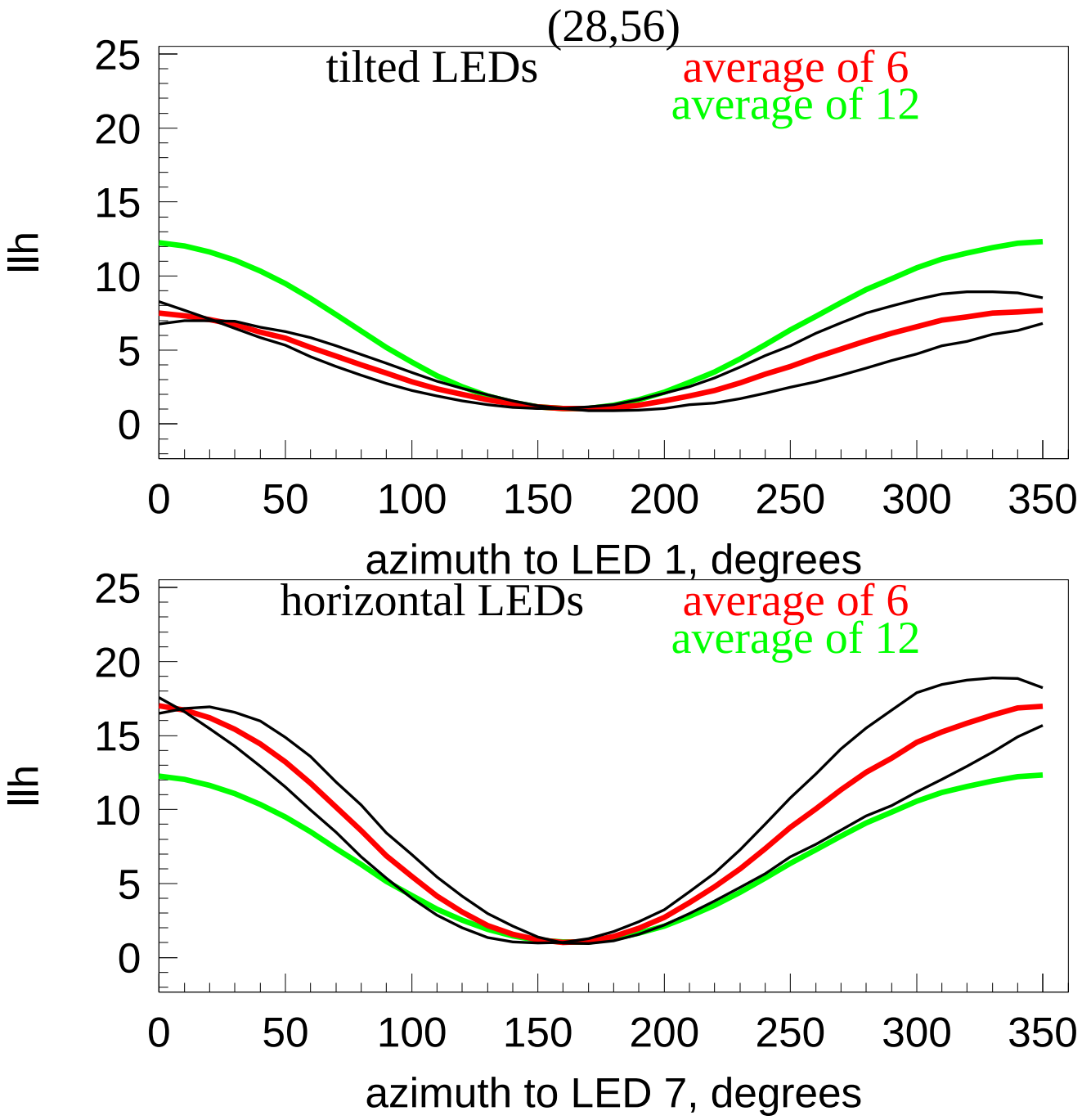

(27,48)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
3
4
2
220
1
12

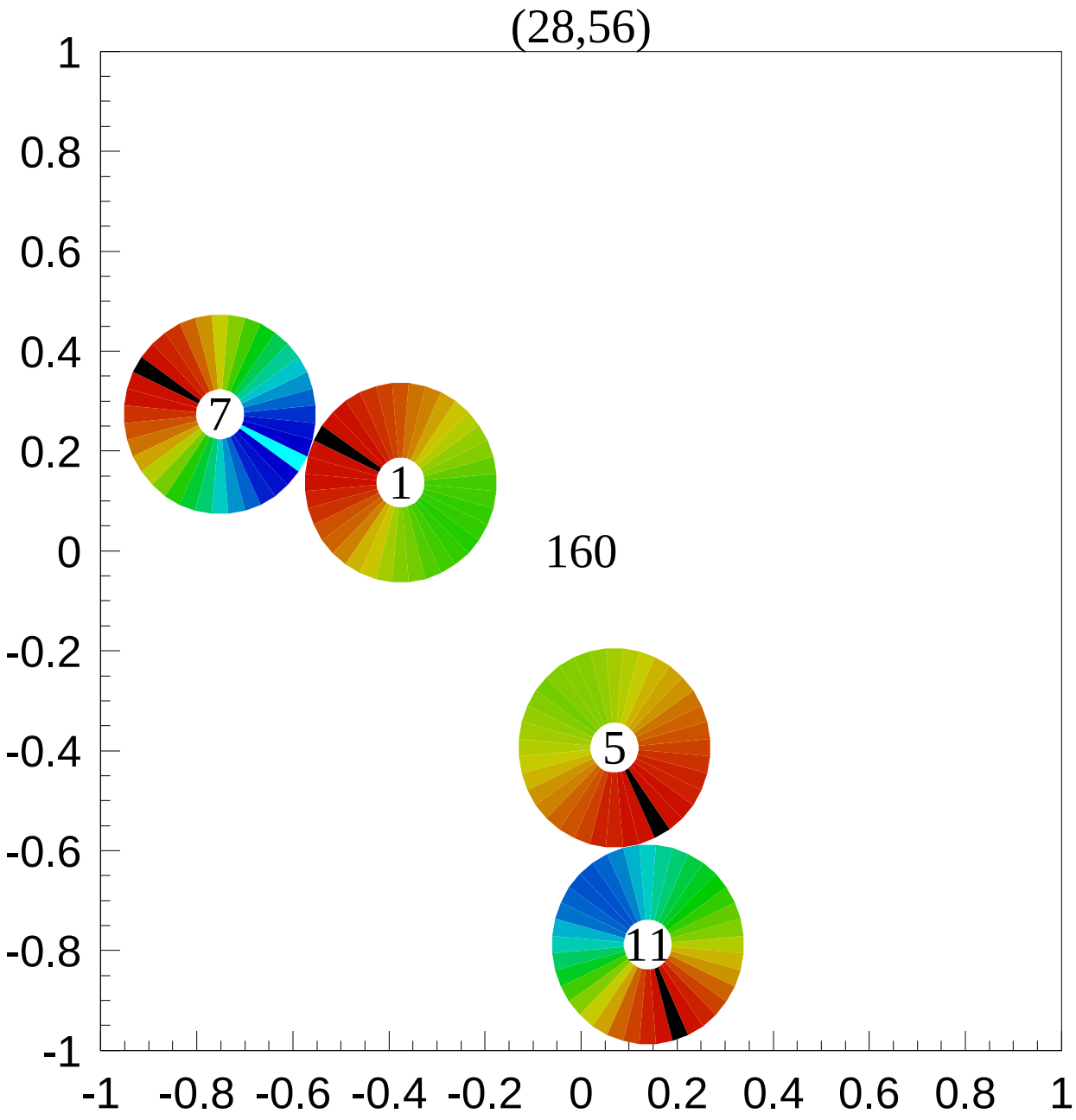

(28,4)
tilted LEDs
average of 6
average of 12
llh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

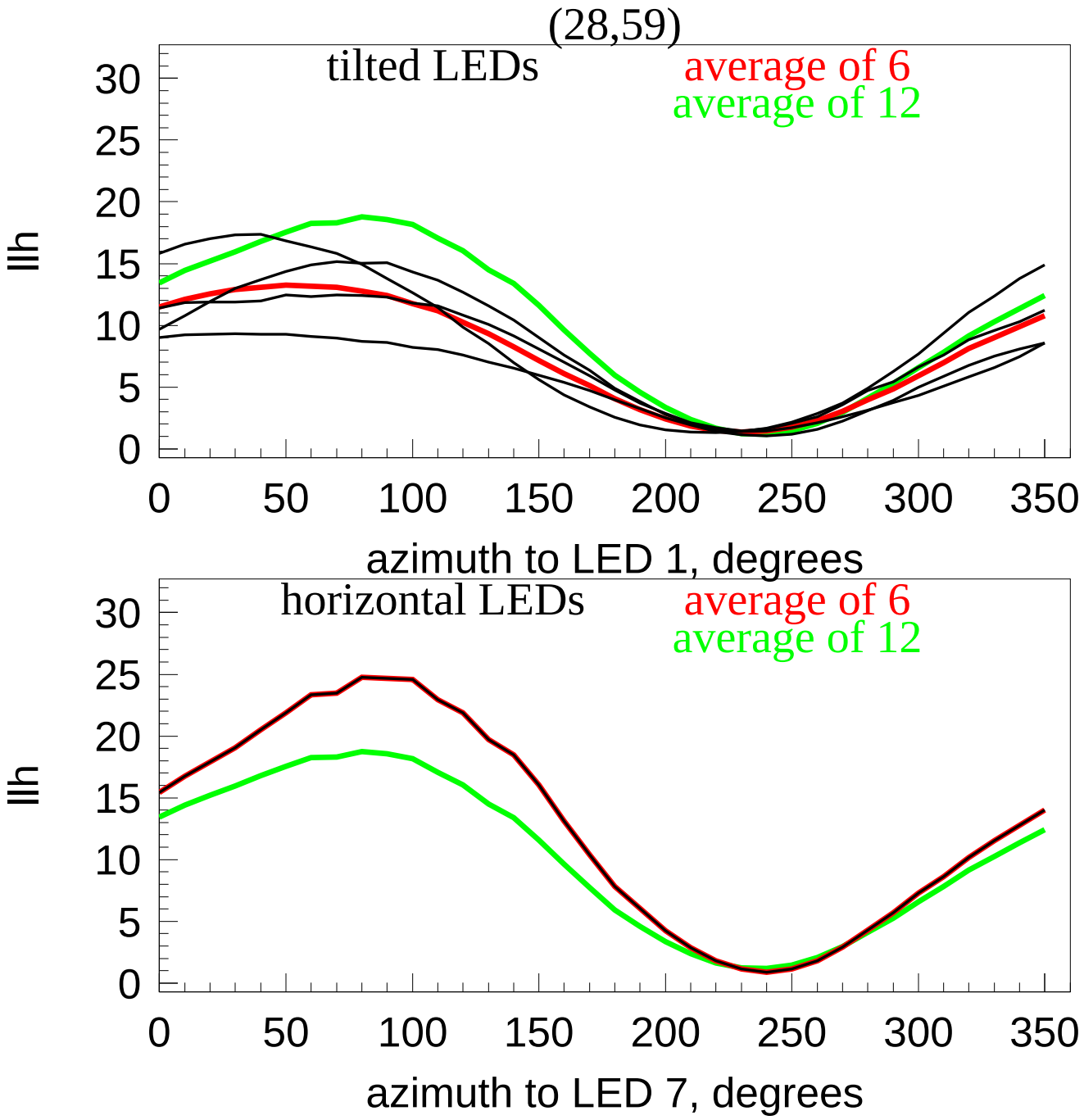

(28,4)
12
7
6
1
11
5
50
2
8
4
3
10
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

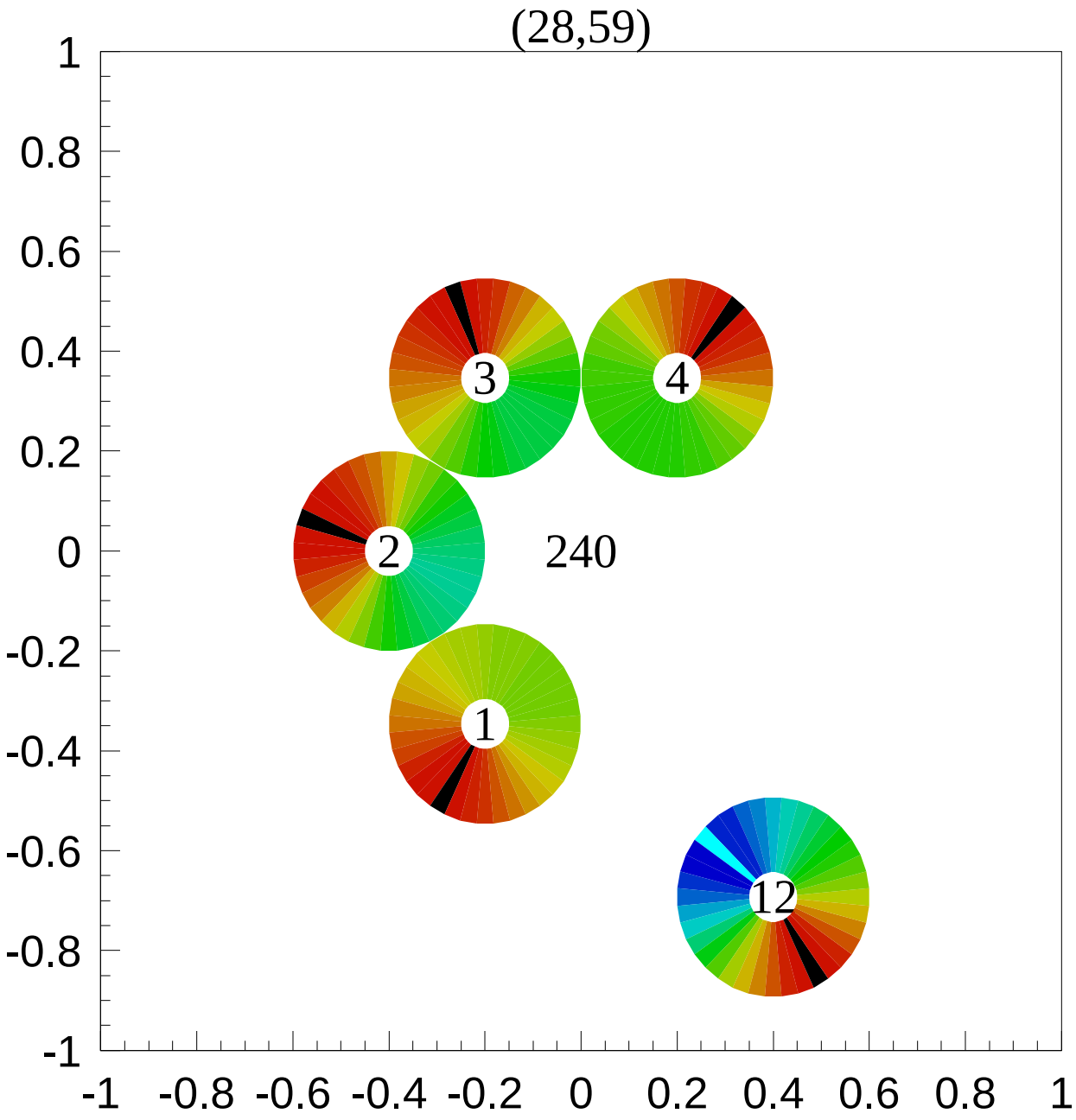

(28,8)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

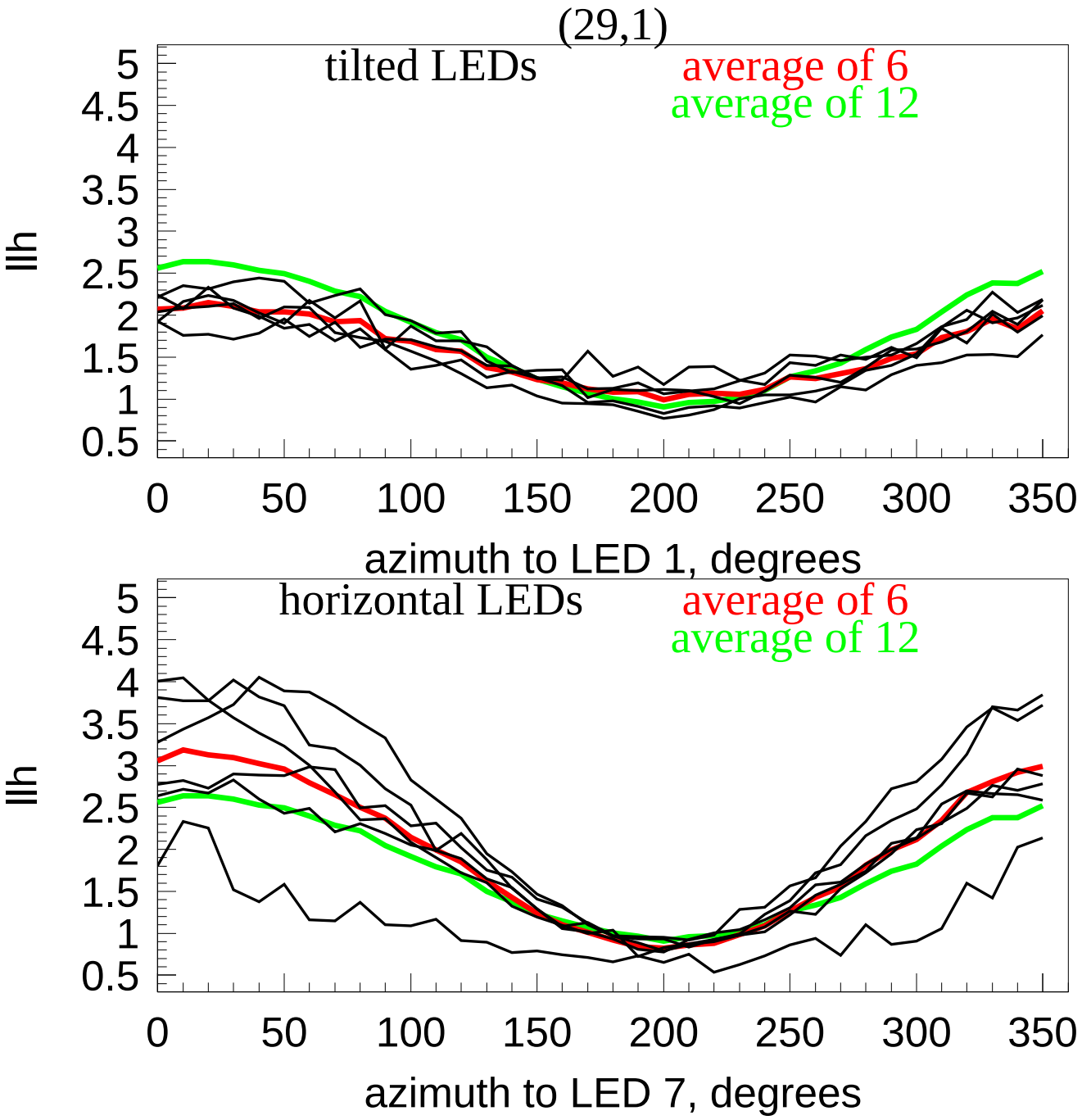

(28,8)
310
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

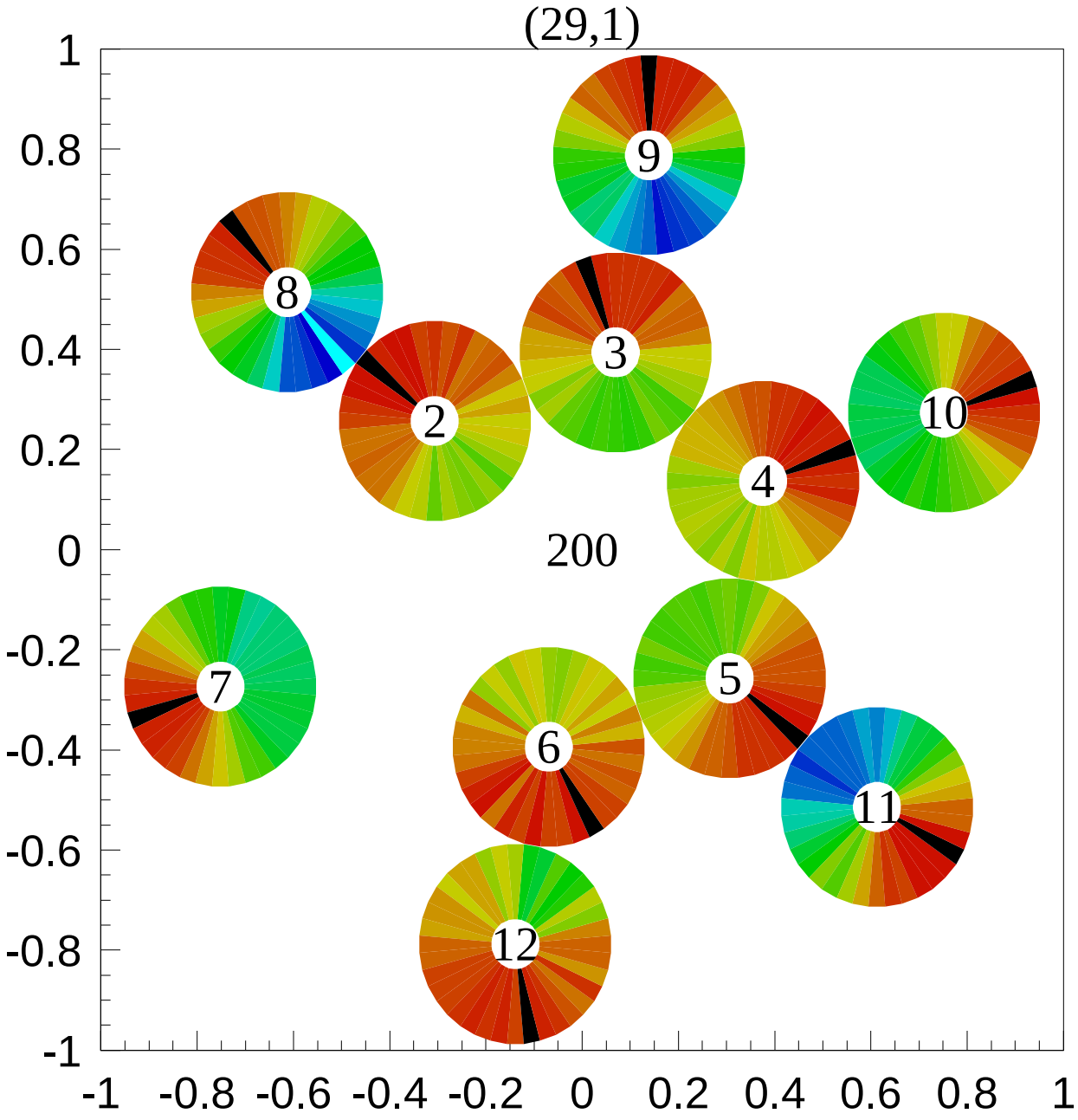

(28,56)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

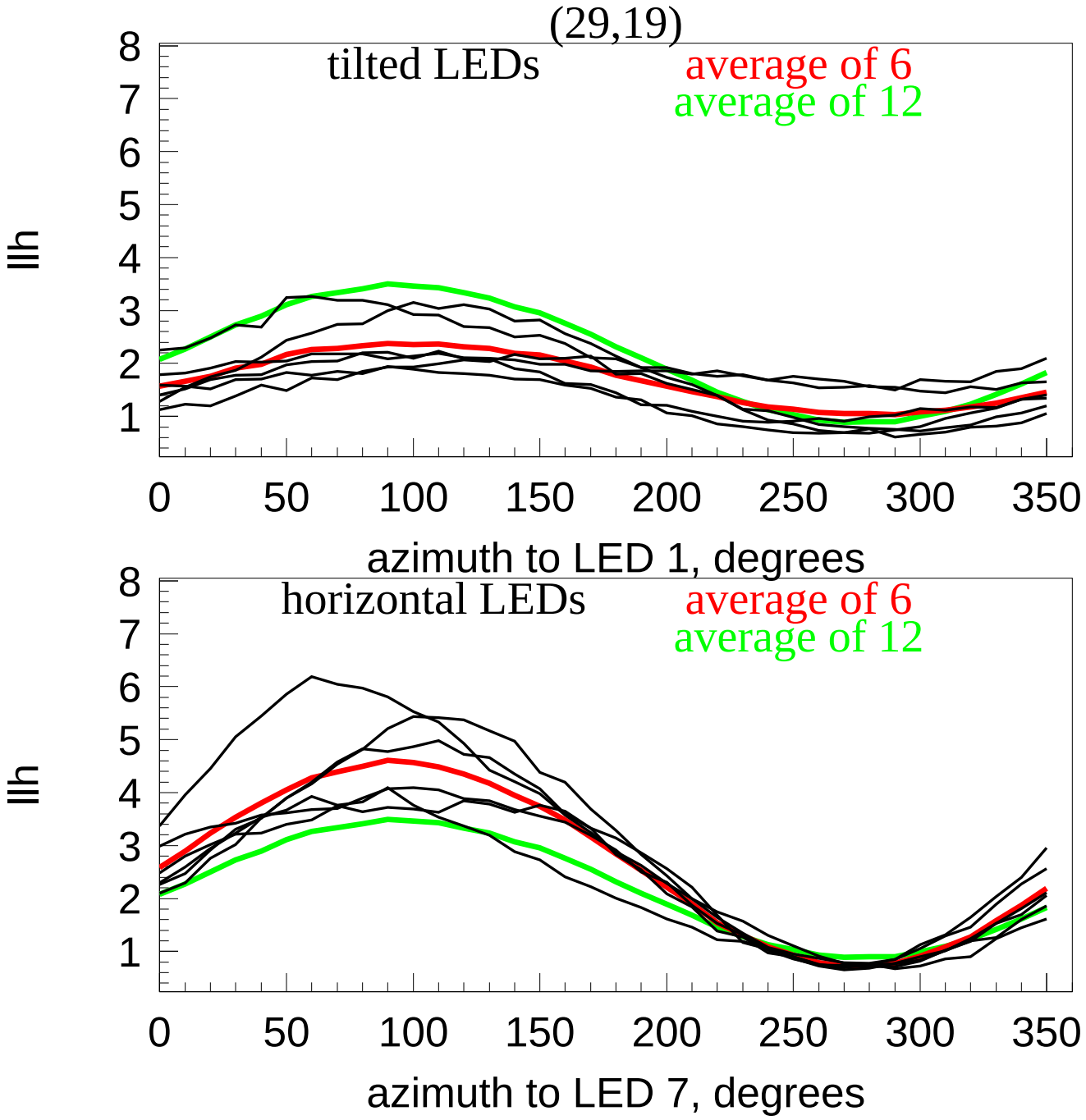

(28,56)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
160
5
11

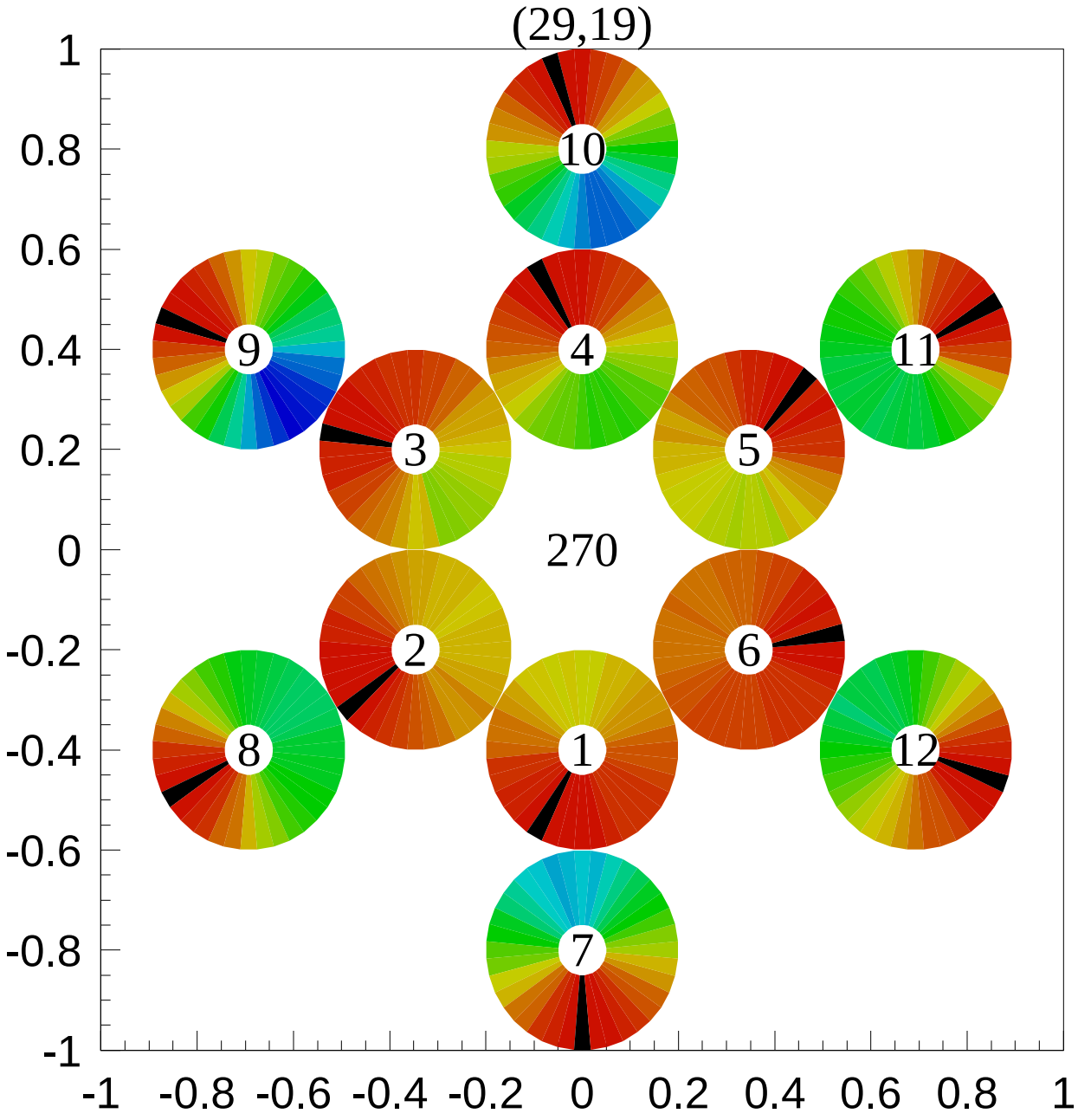

(28,59)
tilted LEDs
average of 6
average of 12
IIh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
IIh
azimuth to LED 7, degrees

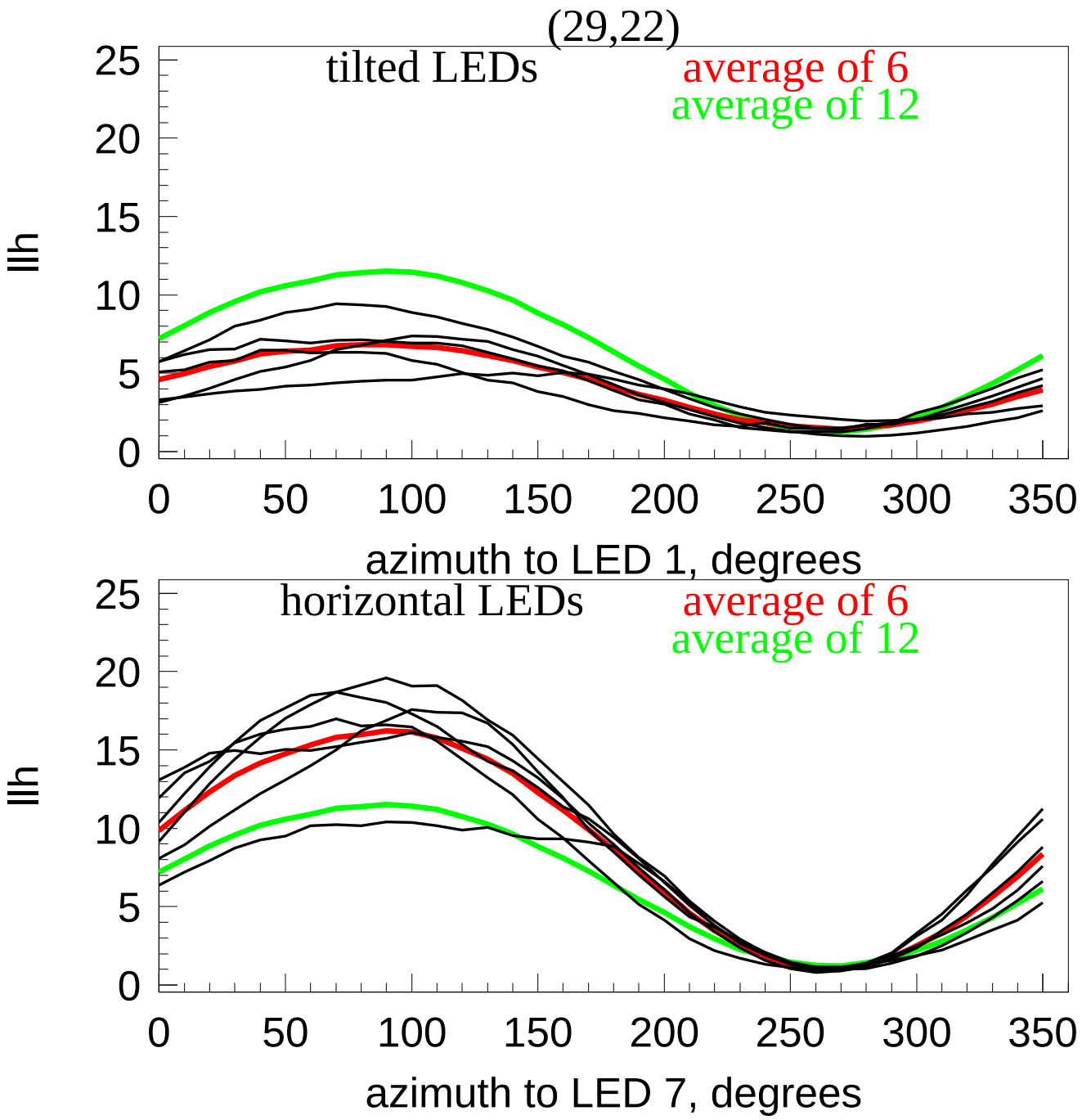

(28,59)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
3
4
2
240
1
12

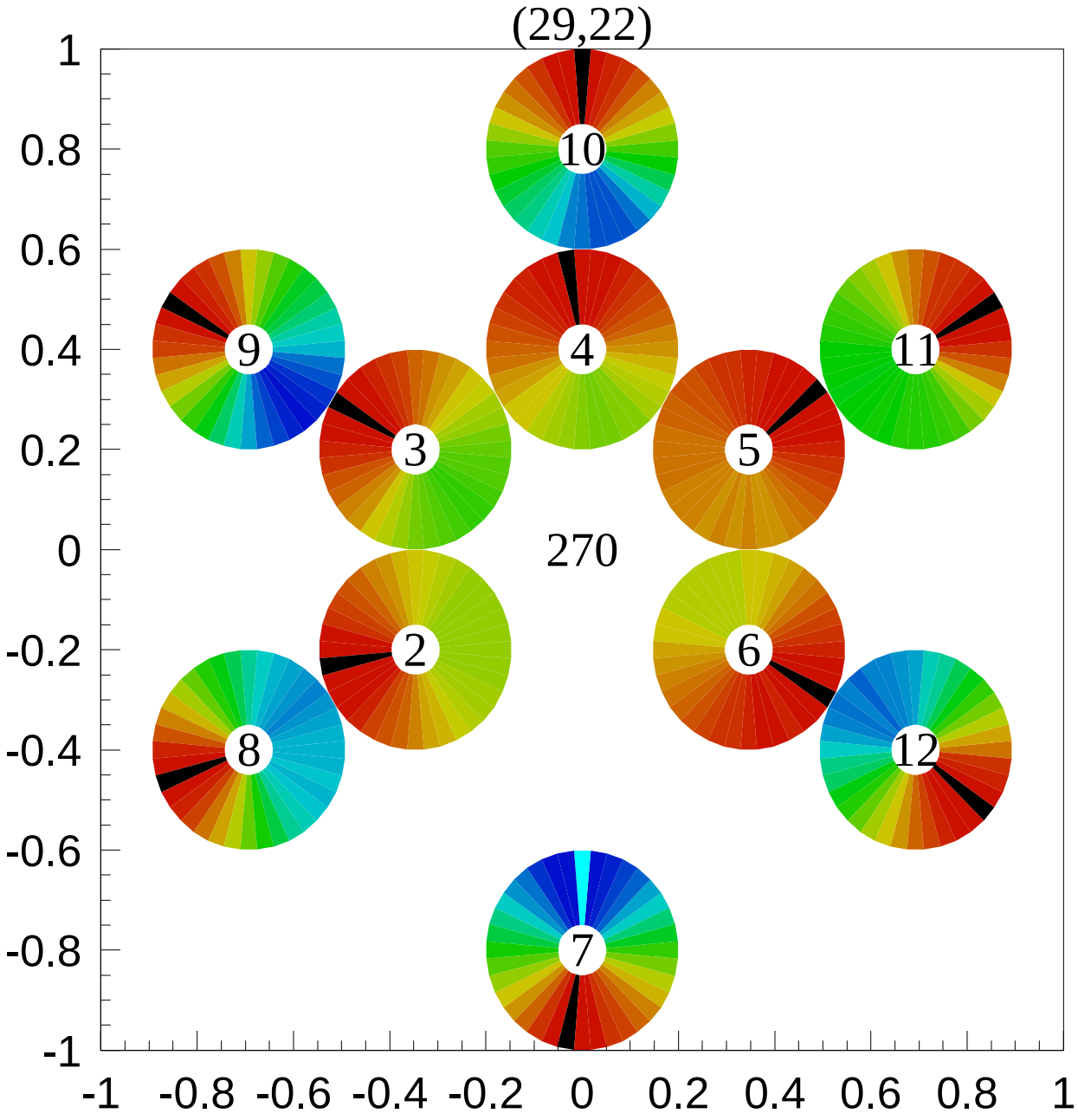

(29,1)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

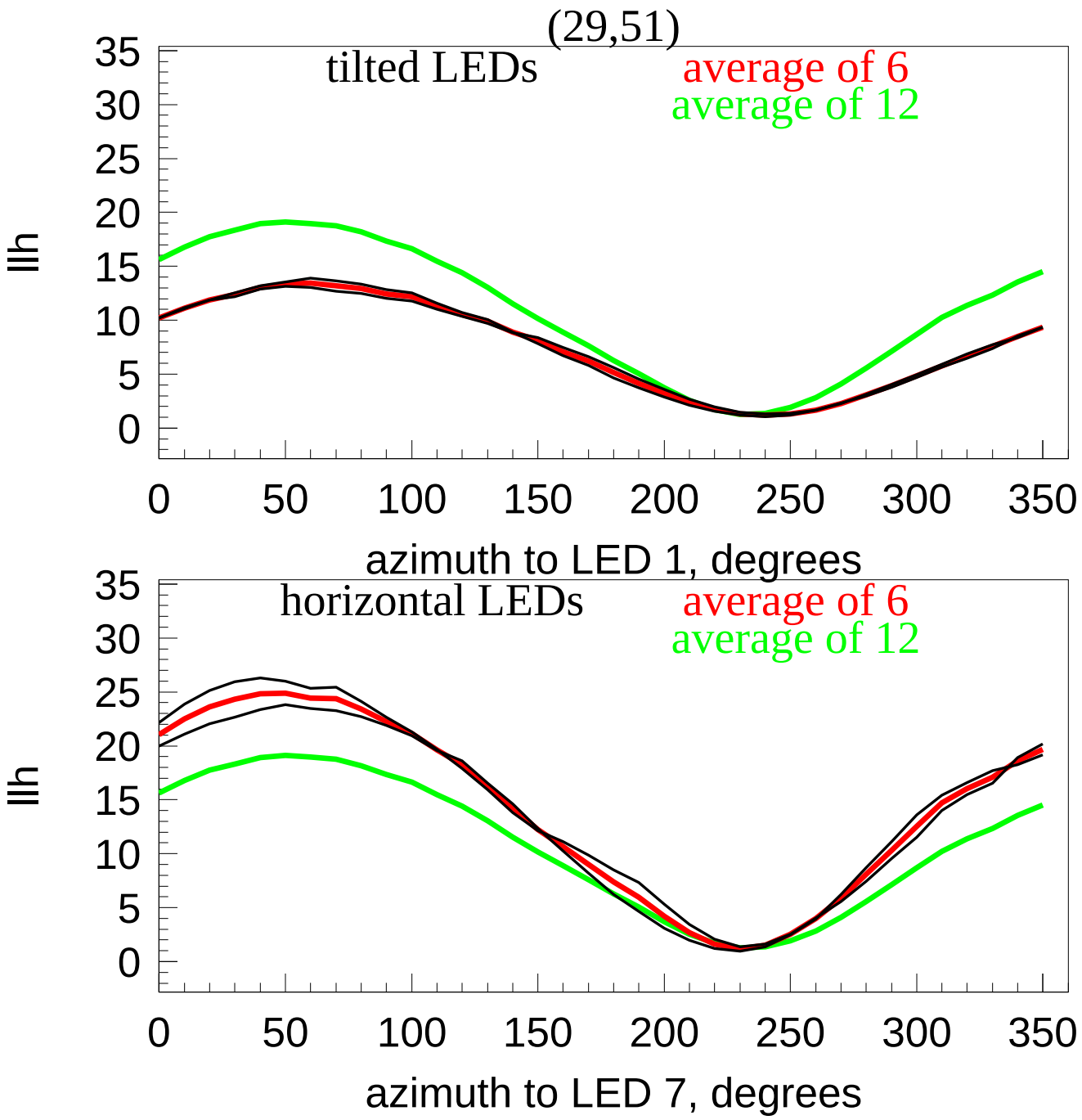

(29,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
8
3
2
10
4
200
7
5
6
11
12

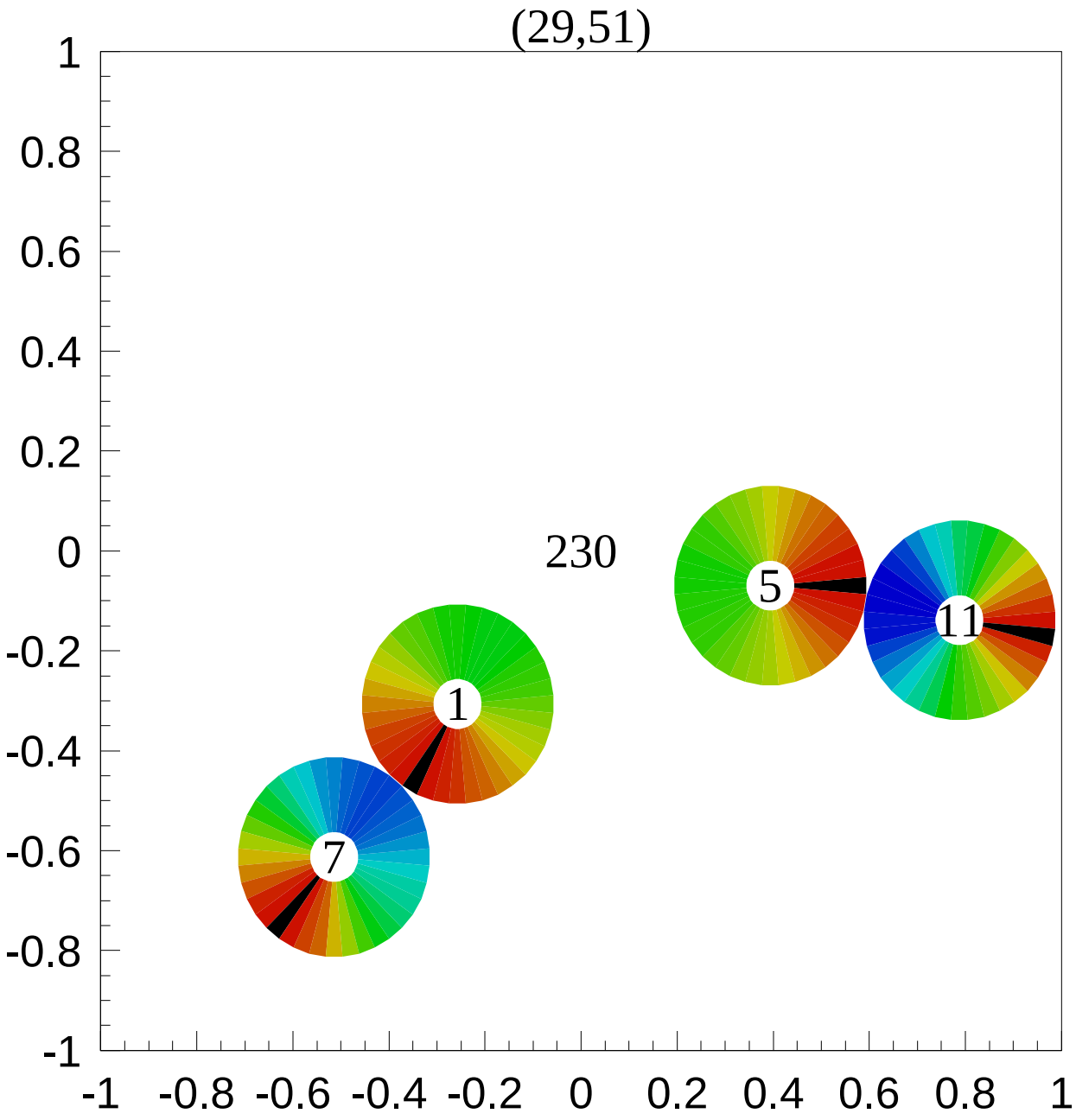

(29,19)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

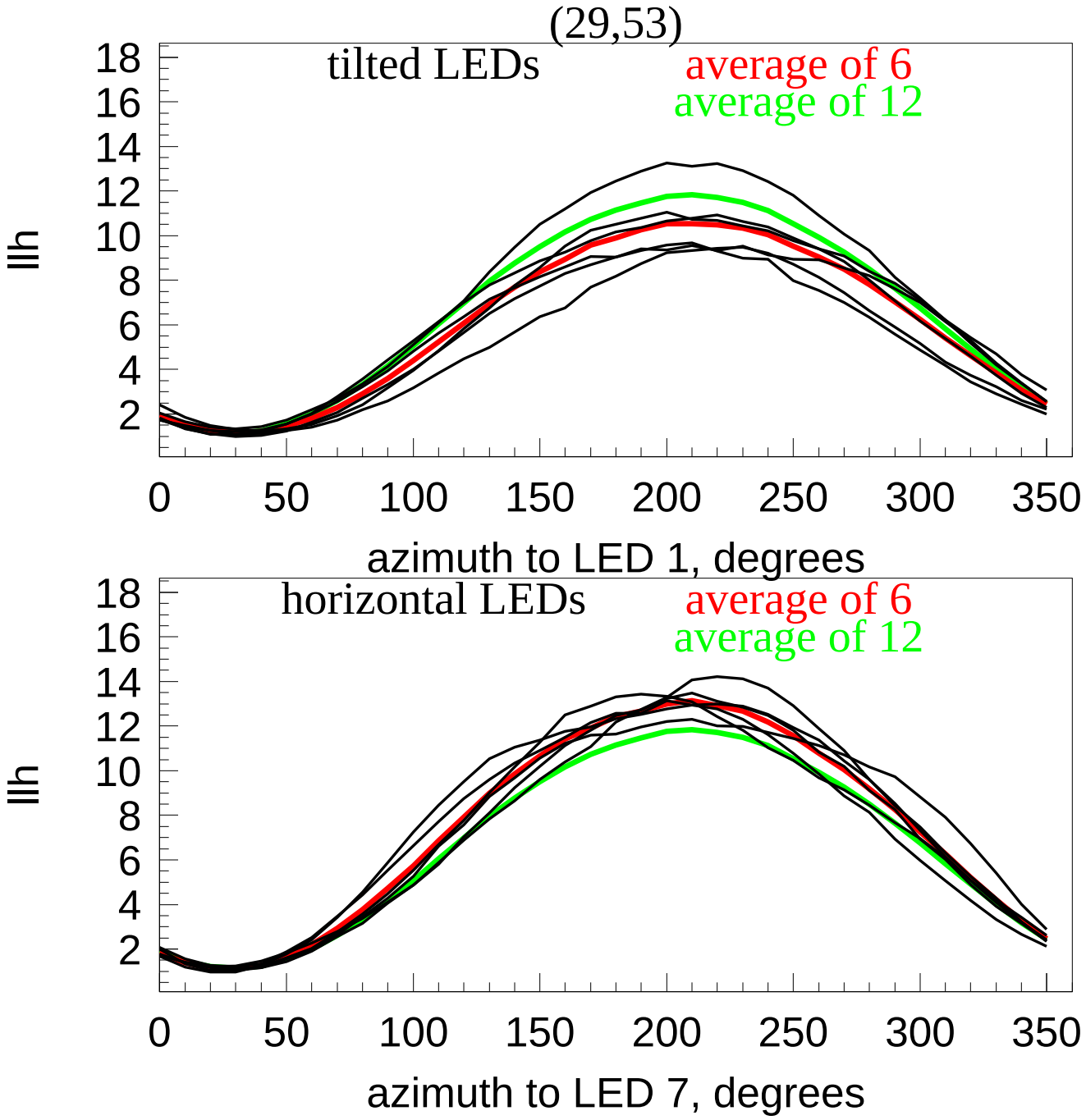

(29,19)
10
9
4
11
3
5
270
2
6
8
1
12
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

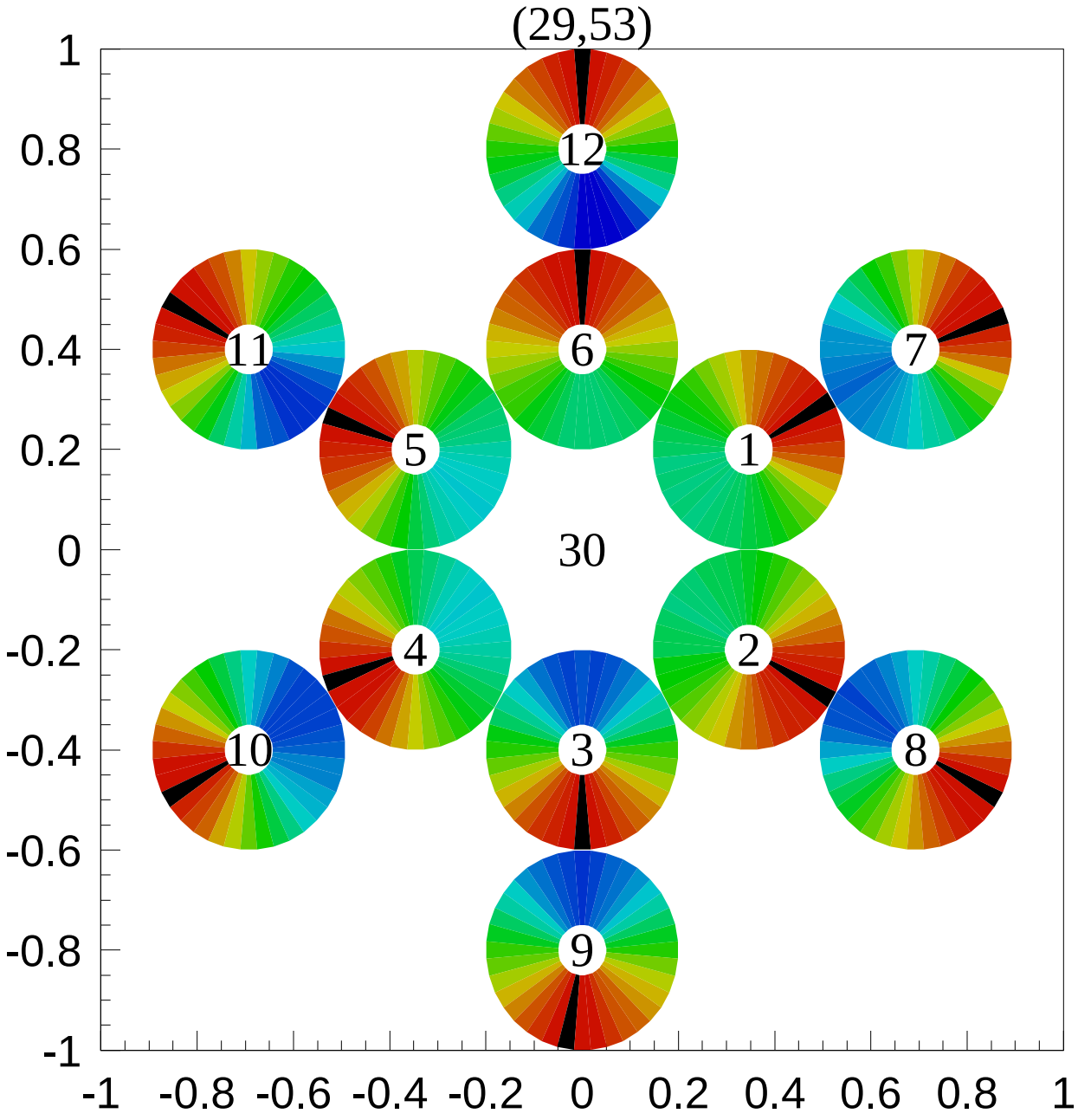

(29,22)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

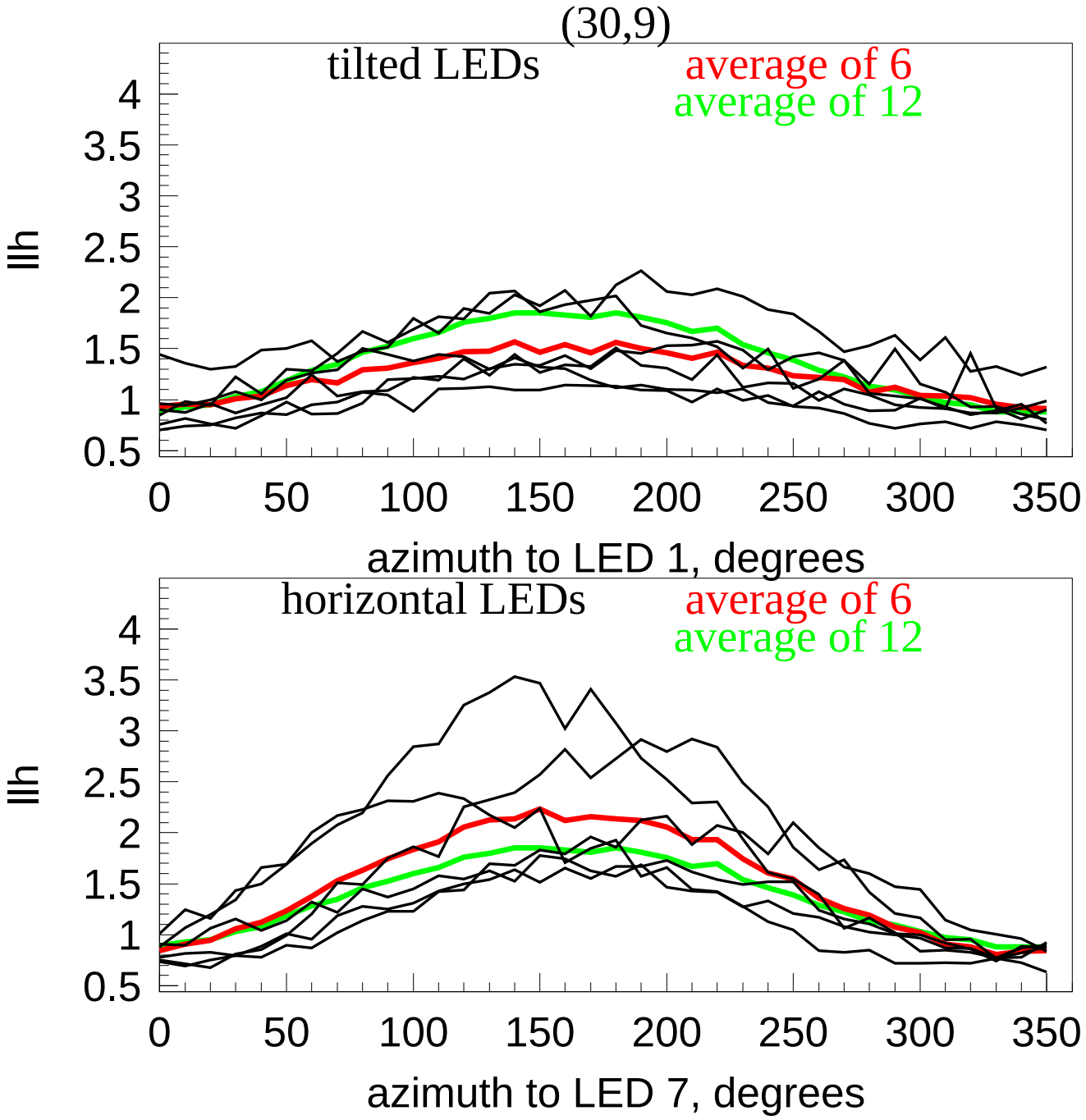

(29,22)
10
9
4
11
3
5
270
2
6
8
12
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

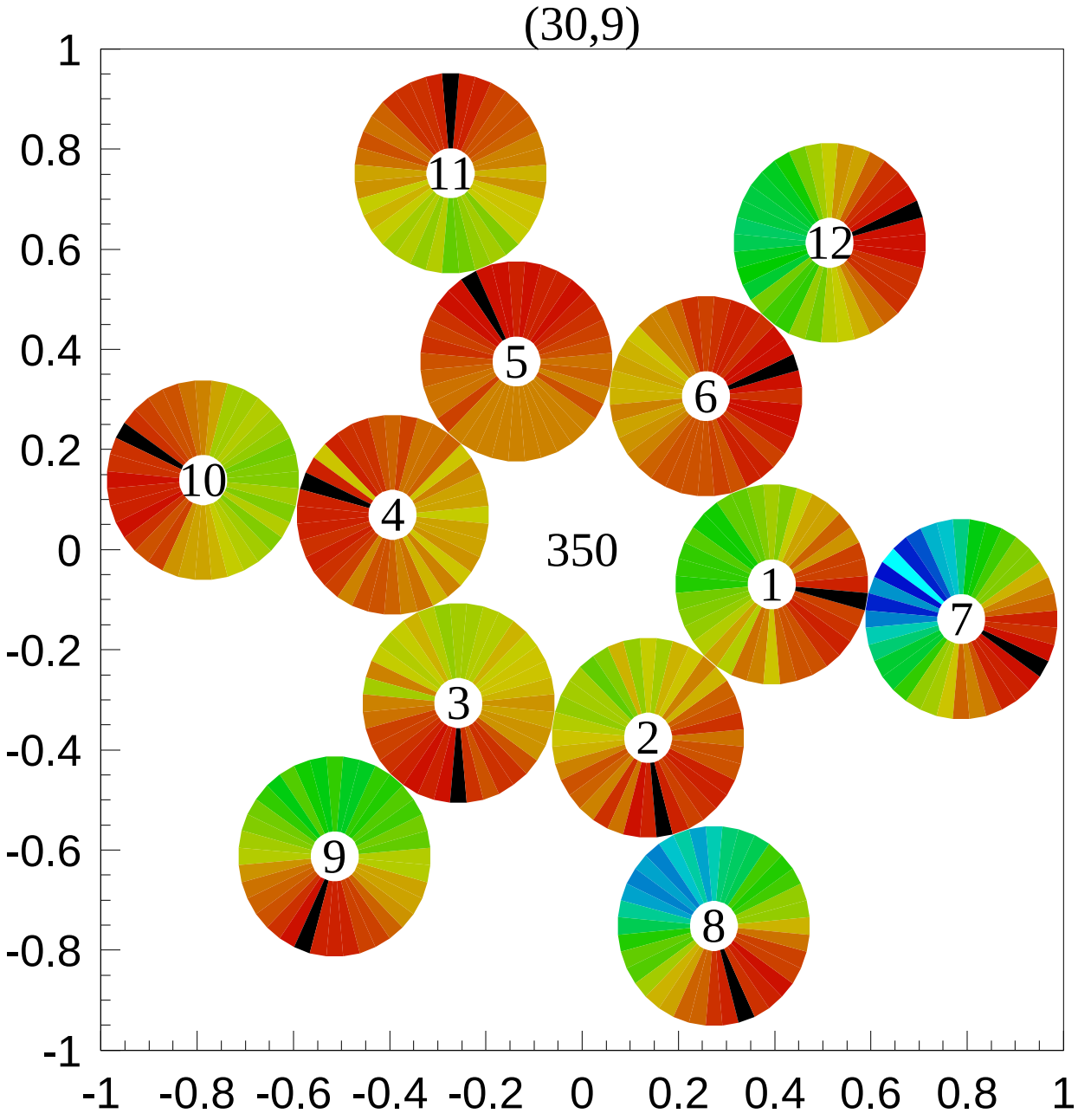

(29,51)
tilted LEDs
average of 6
average of 12
Ilh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

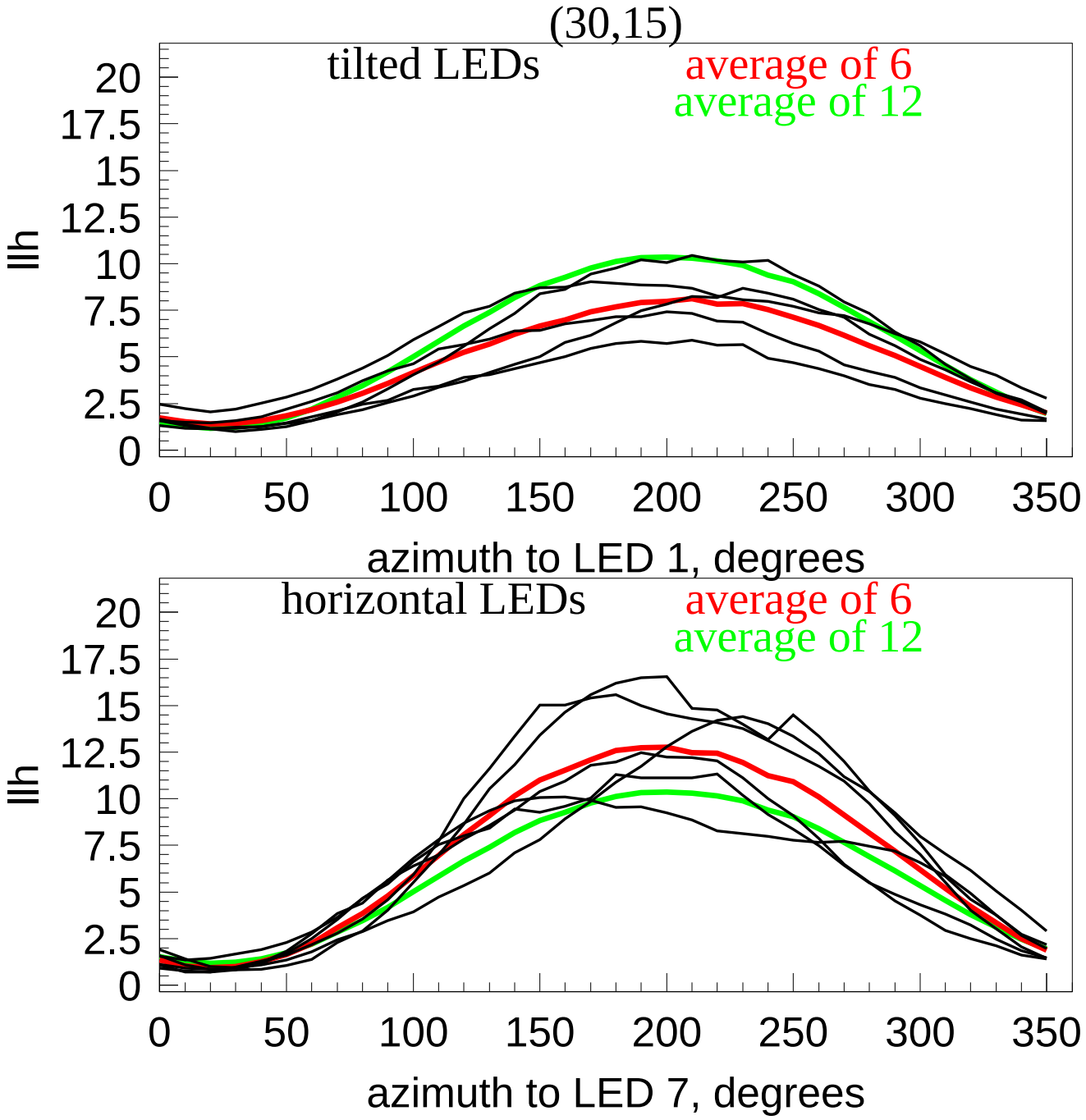

(29,51)
230
1
5
11
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

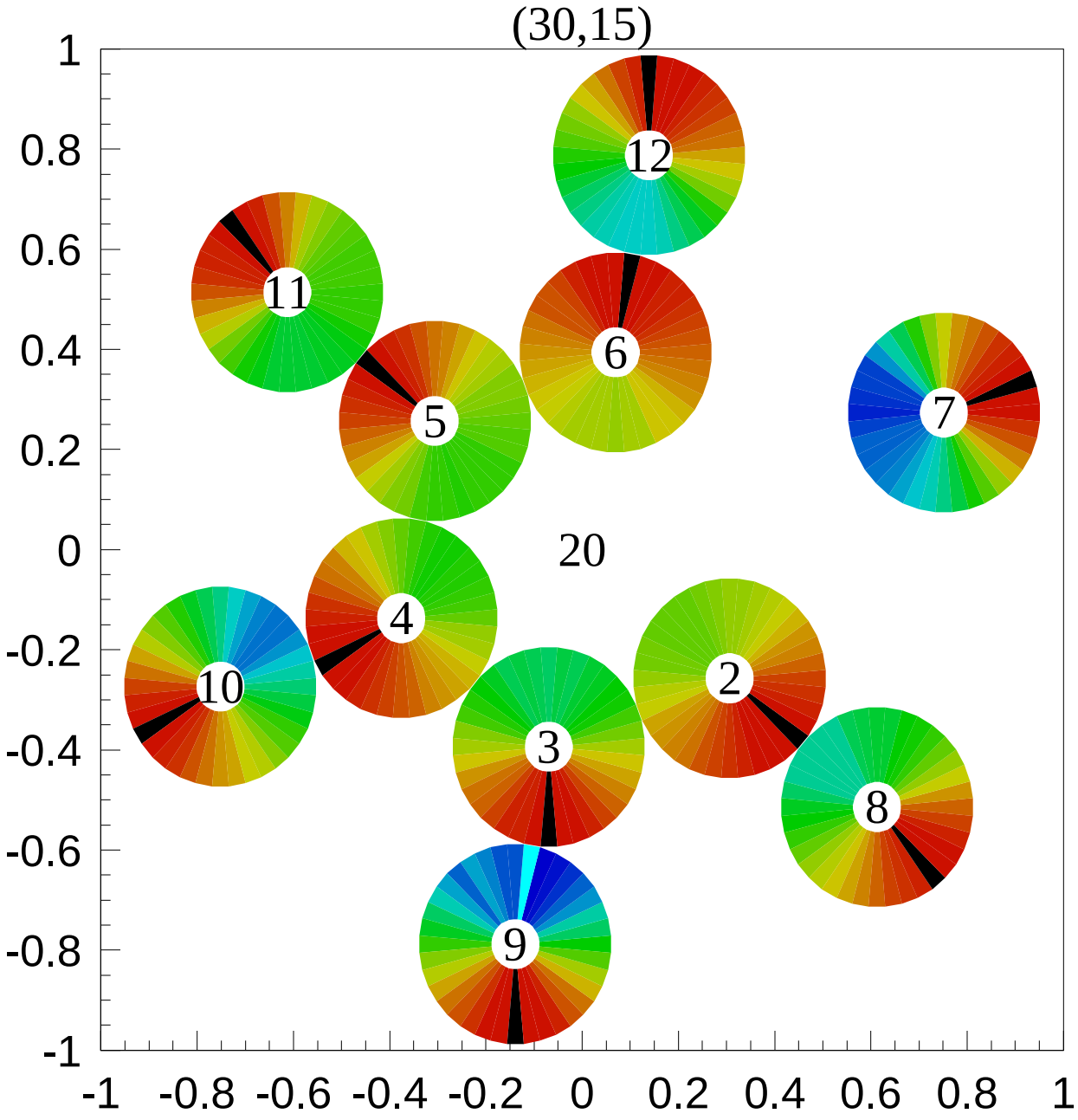

(29,53)
tilted LEDs
average of 6
average of 12
Ilh
18
16
14
12
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

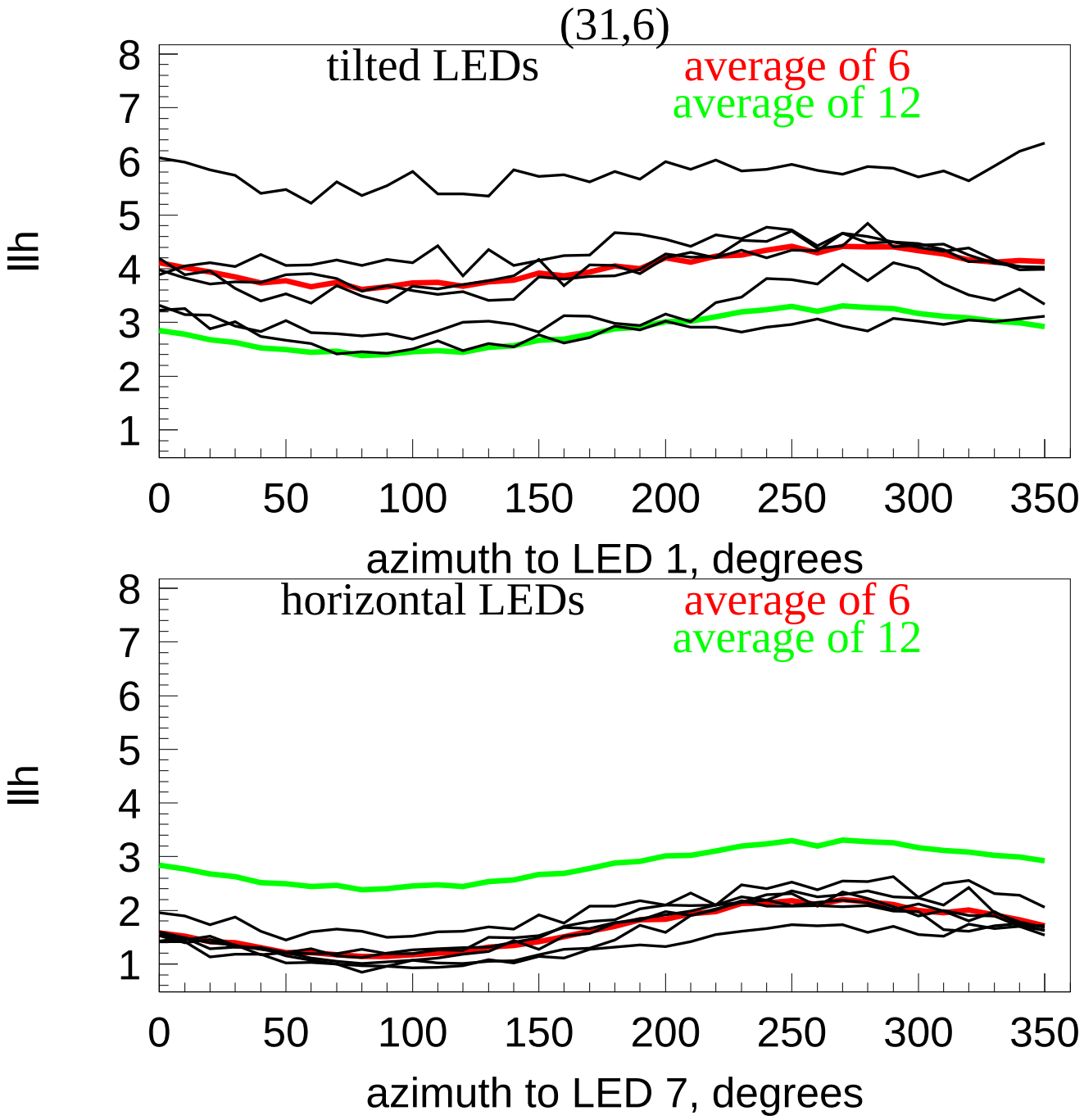

(29,53)
12
11
6
7
5
1
30
4
2
10
3
8
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

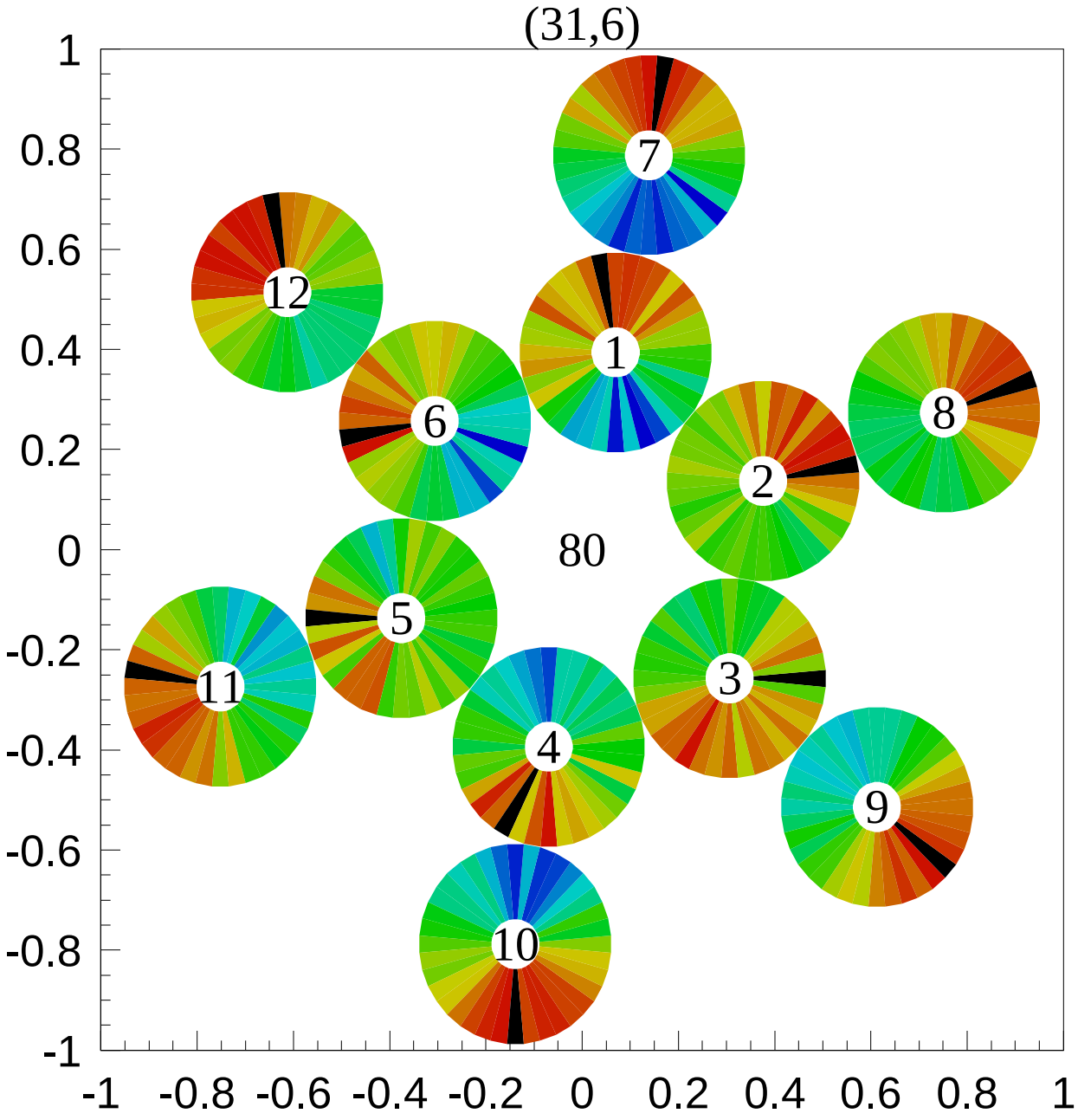

(30,9)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

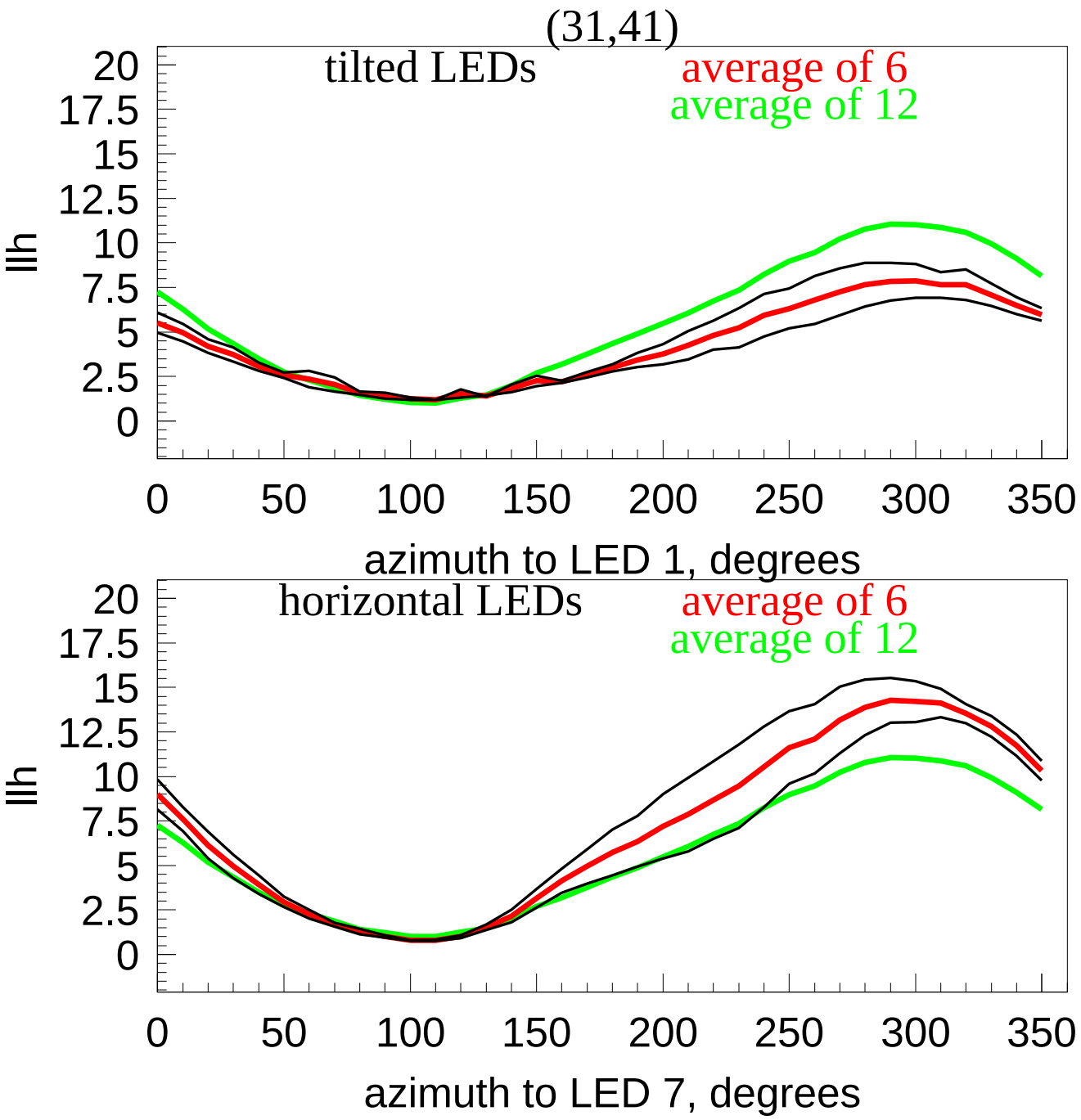

(30,9)
350
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

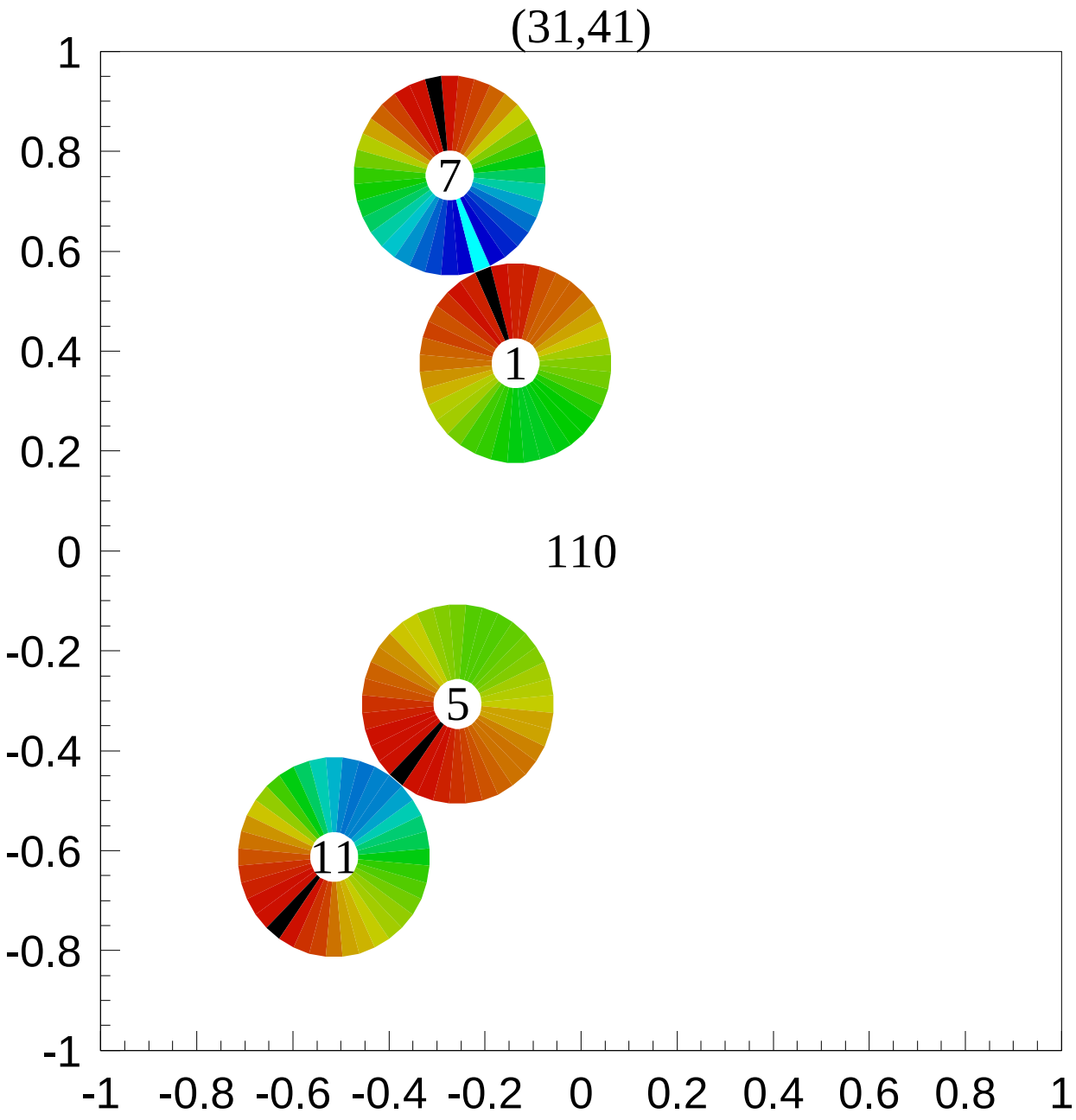

(30,15)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

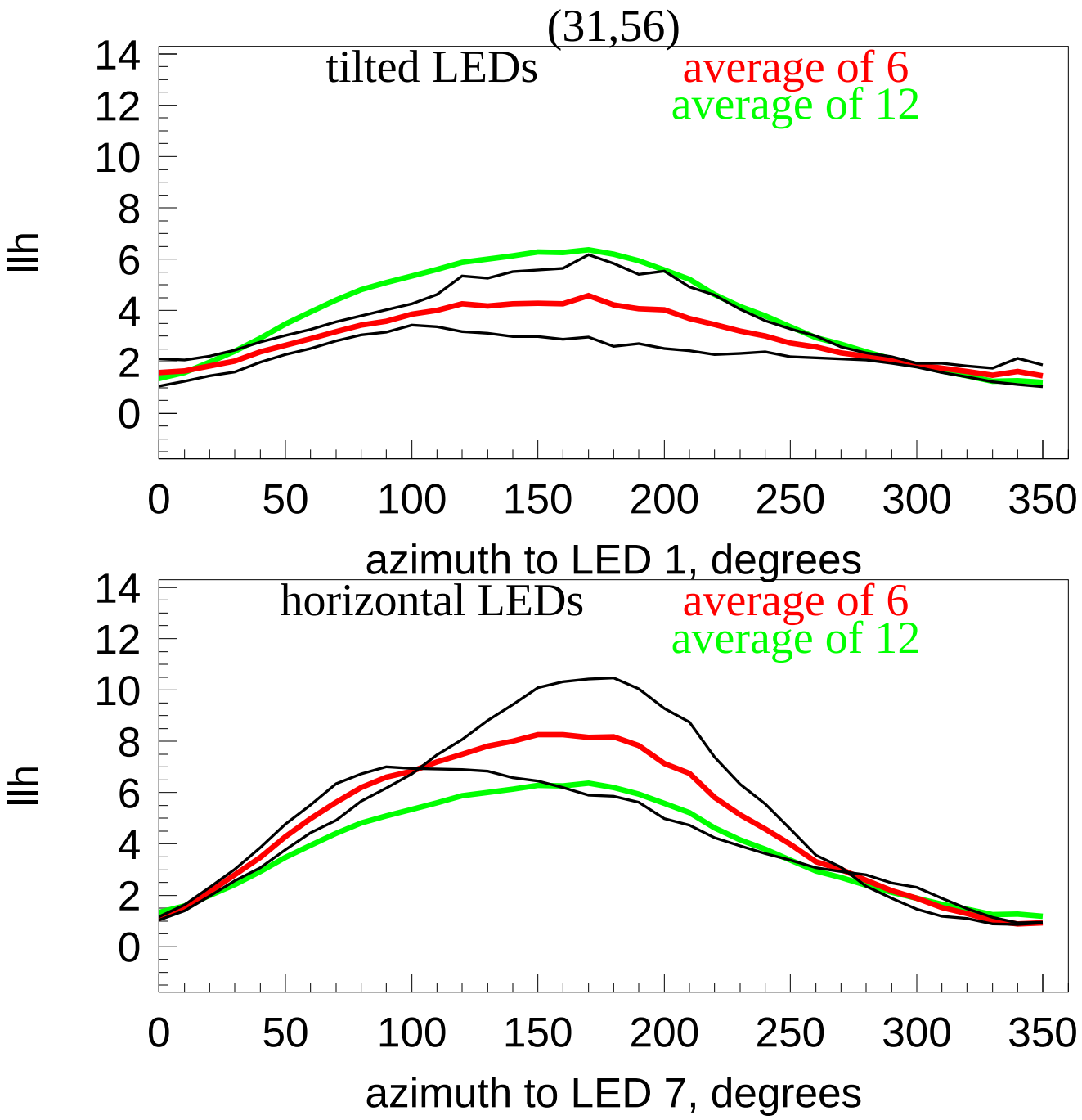

(30,15)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
11
6
5
7
20
4
10
2
3
8
9

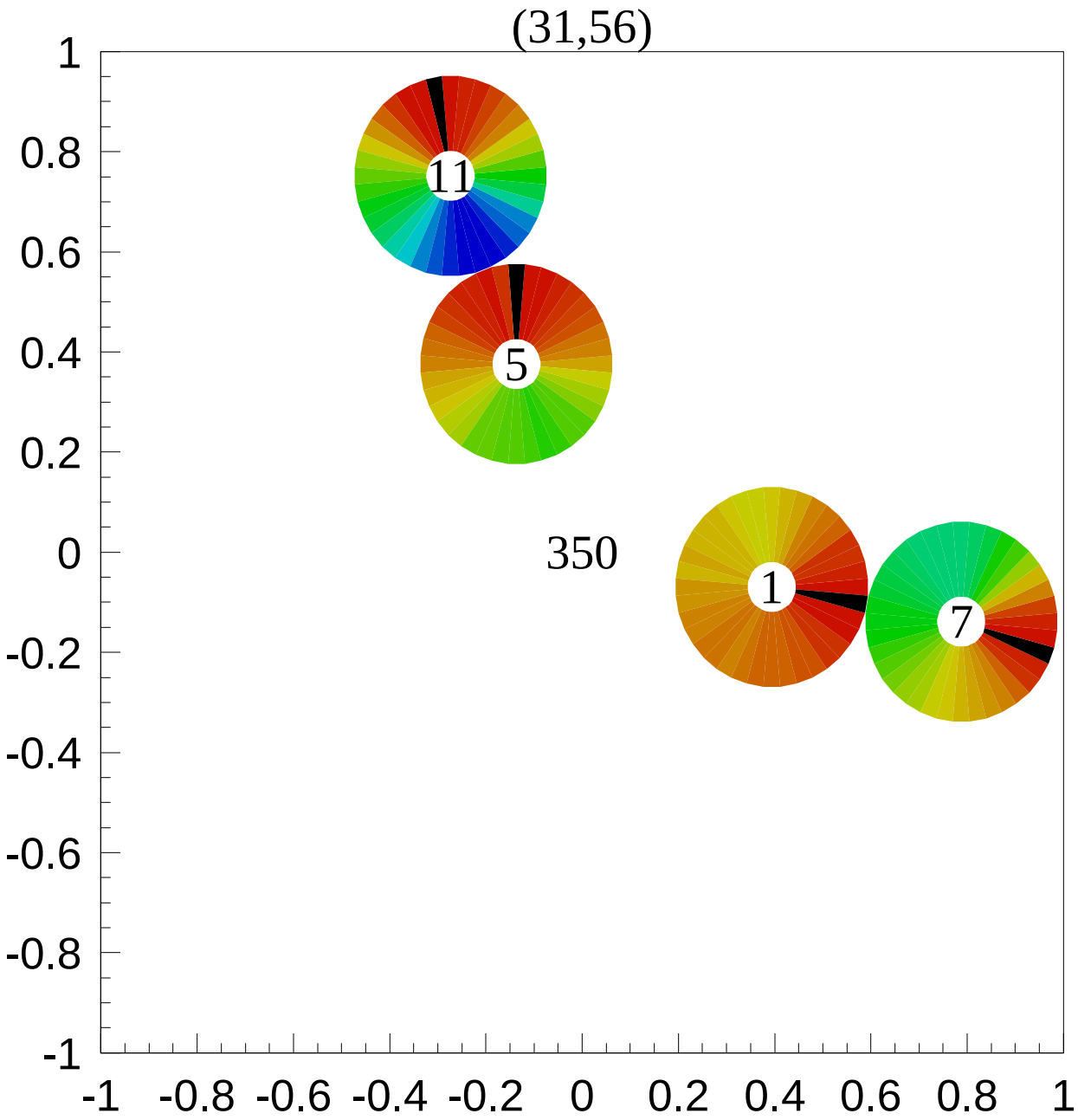

(31,6)
tilted LEDs
average of 6
average of 12
llh
8
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

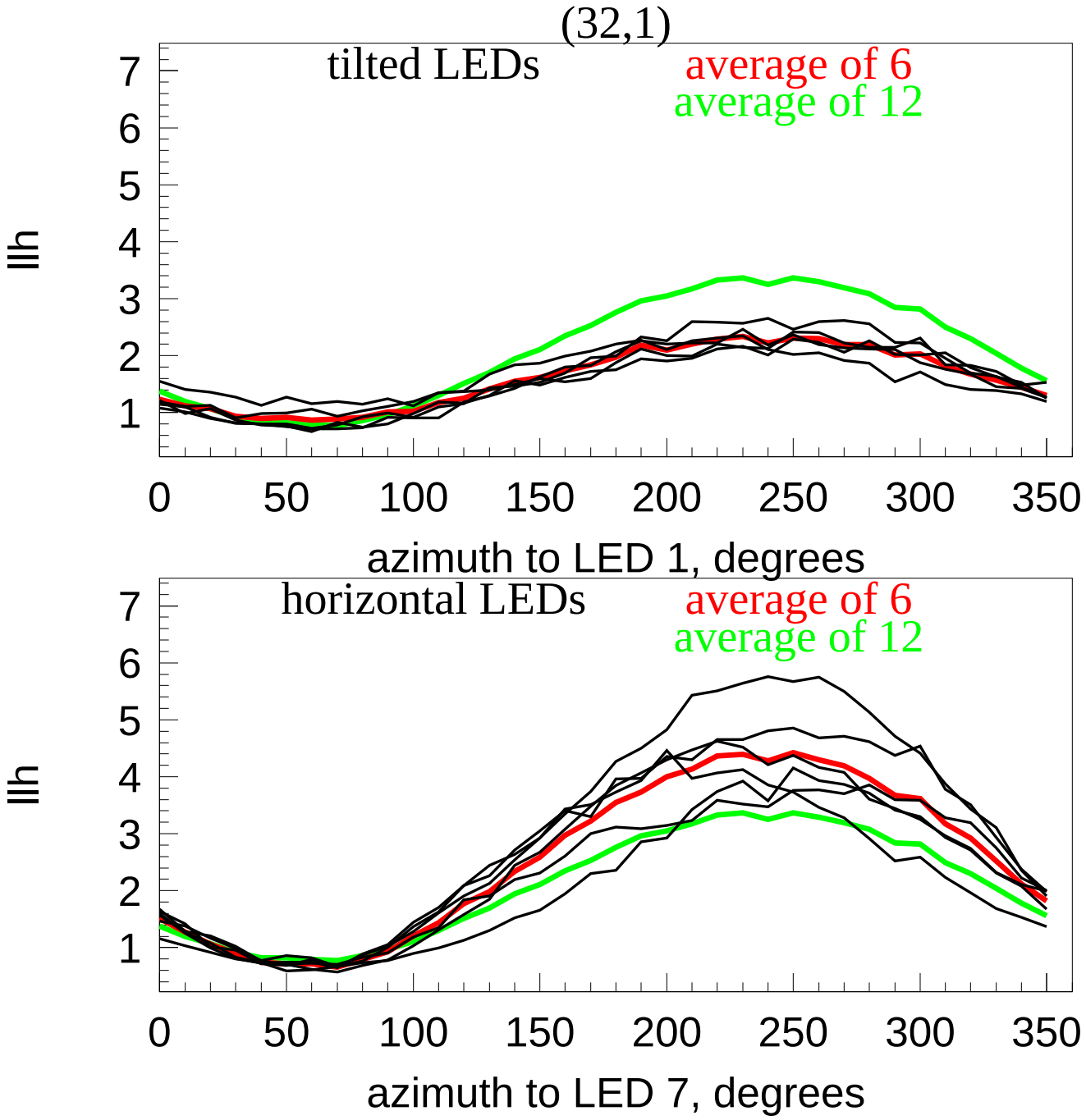

(31,6)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
12
1
6
8
2
80
5
11
3
4
9
10

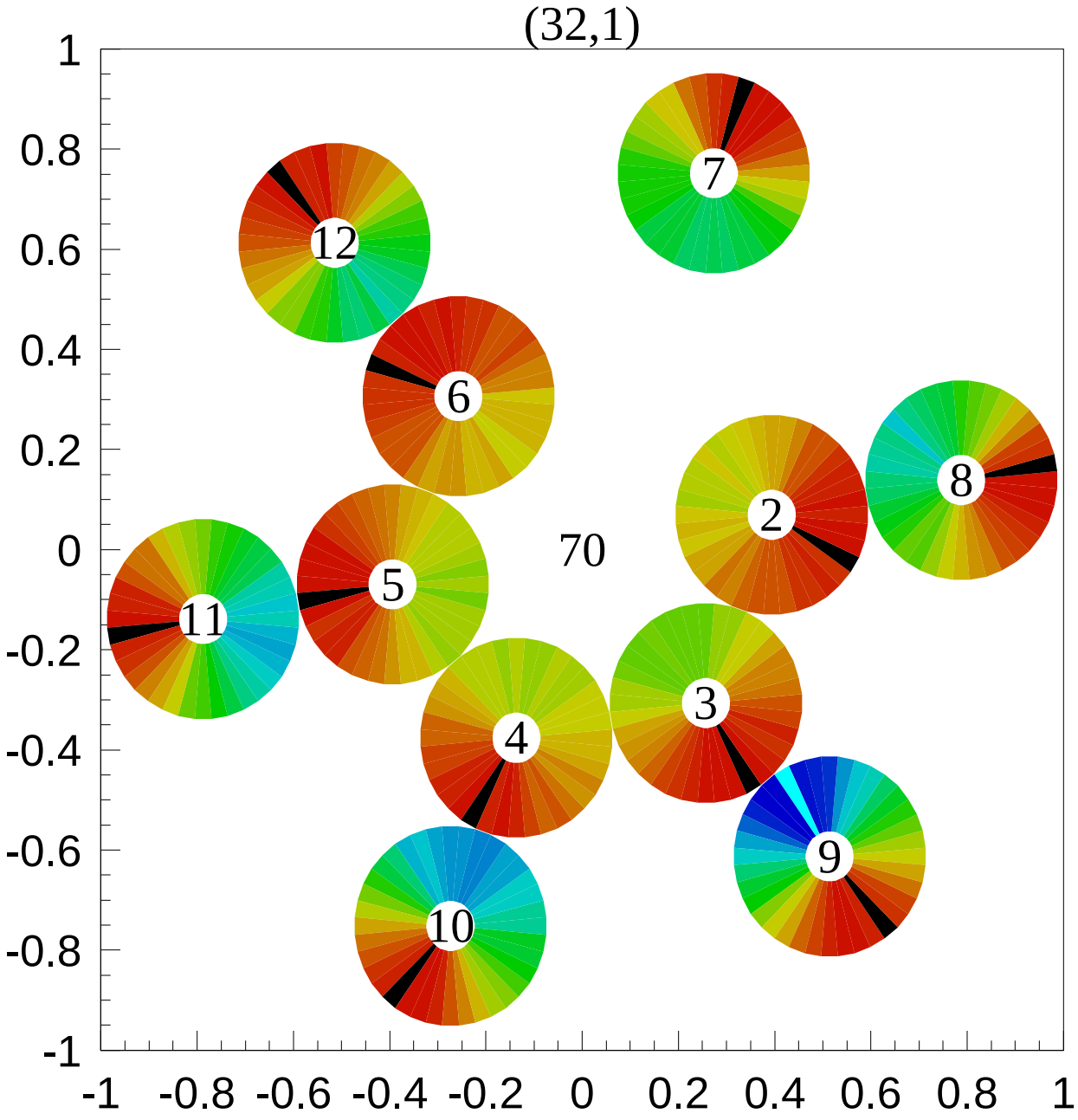

(31,41)
tilted LEDs
average of 6
average of 12
llh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

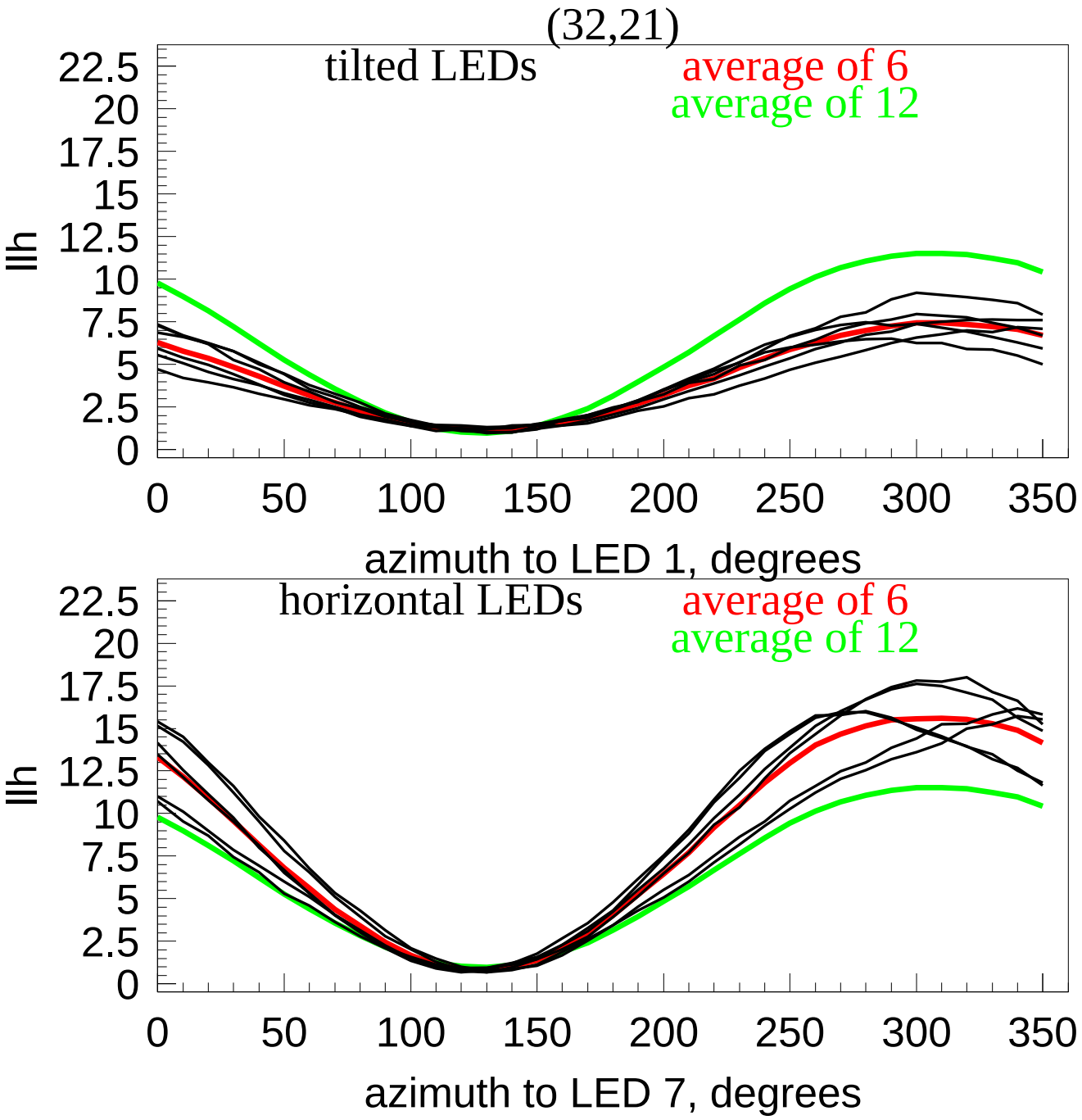

(31,41)
7
1
110
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

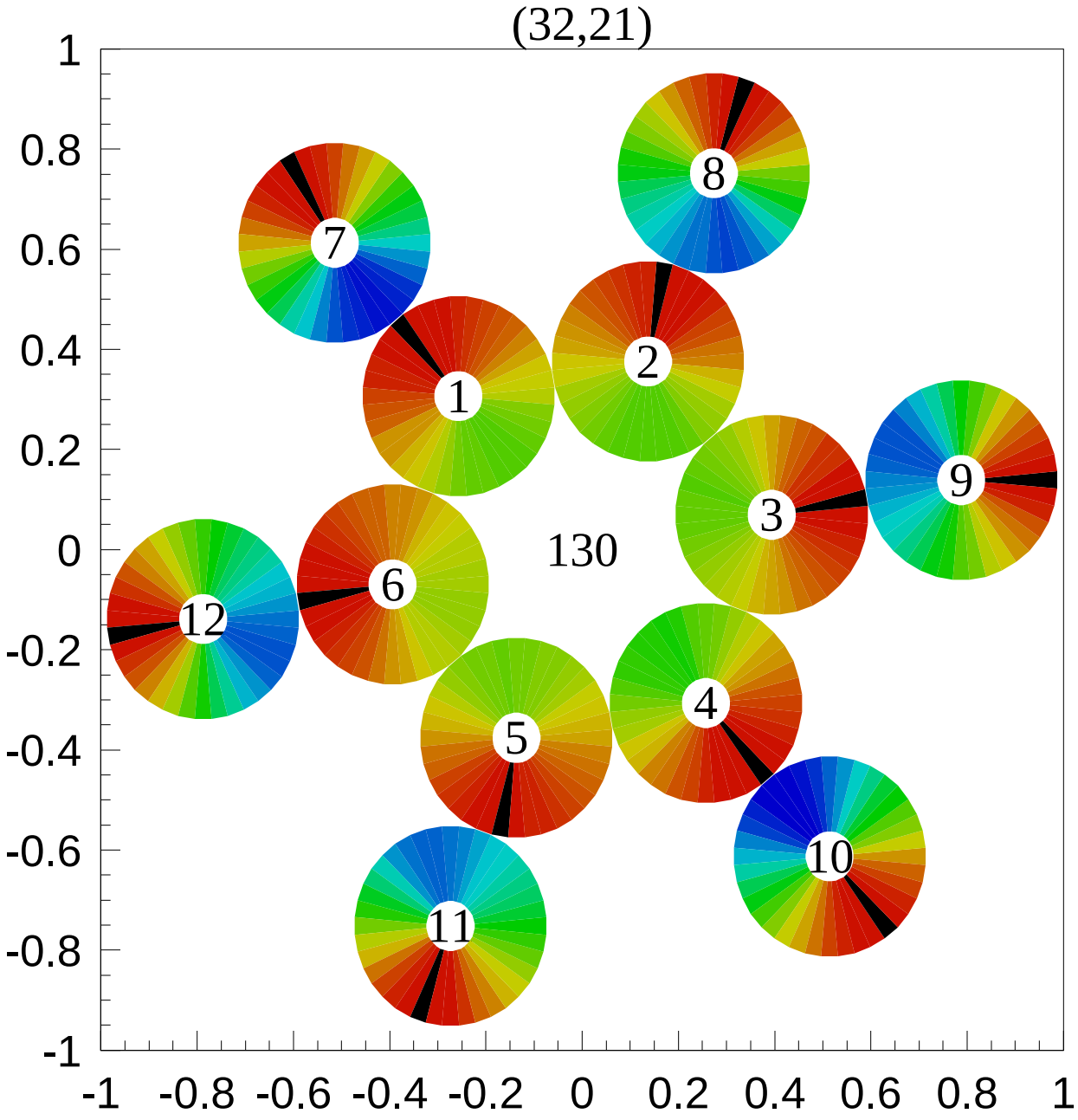

(31,56)
tilted LEDs
average of 6
average of 12
IIh
0
2
4
6
8
10
12
14
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
IIh
azimuth to LED 7, degrees

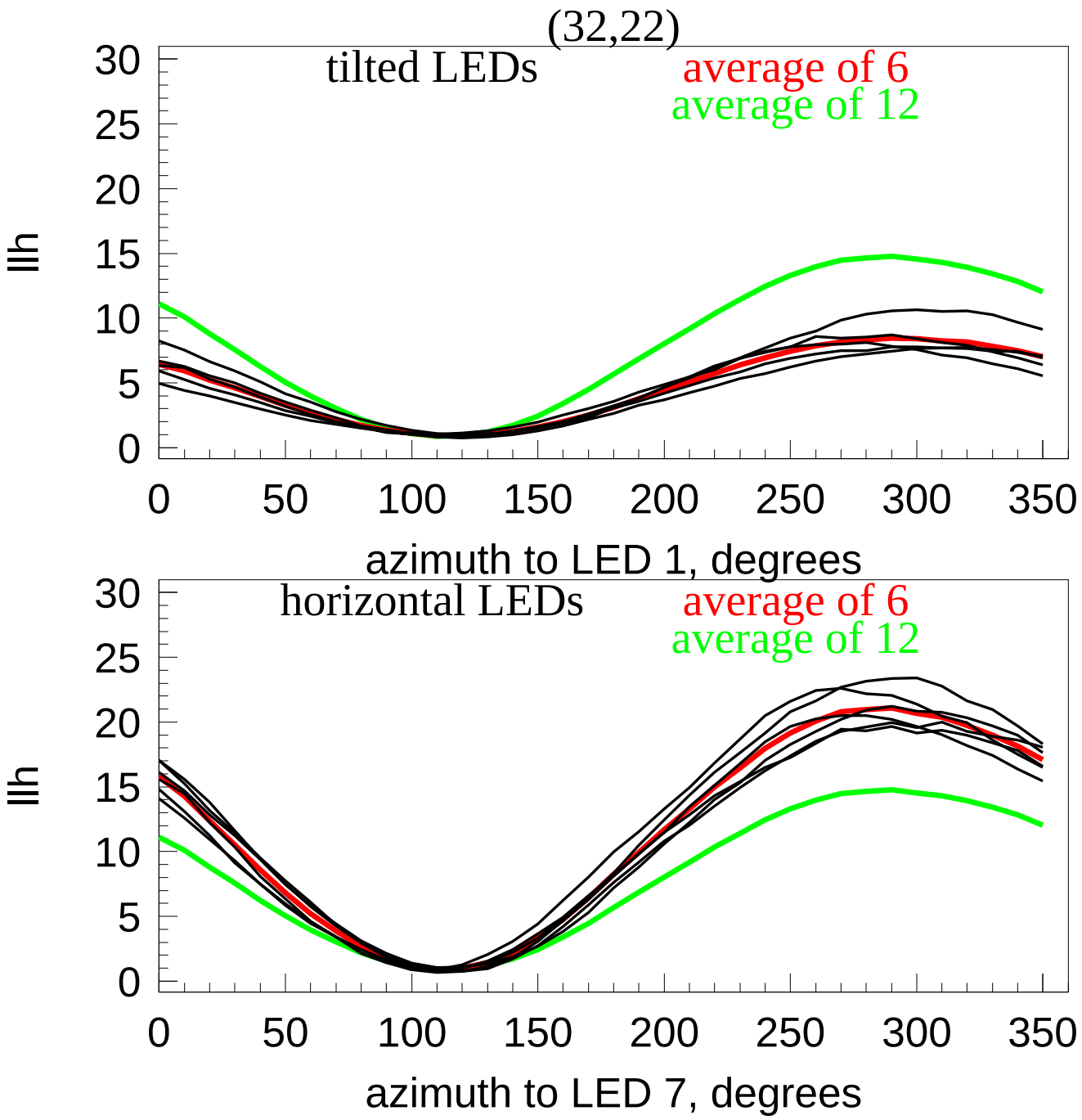

(31,56)
11
5
350
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

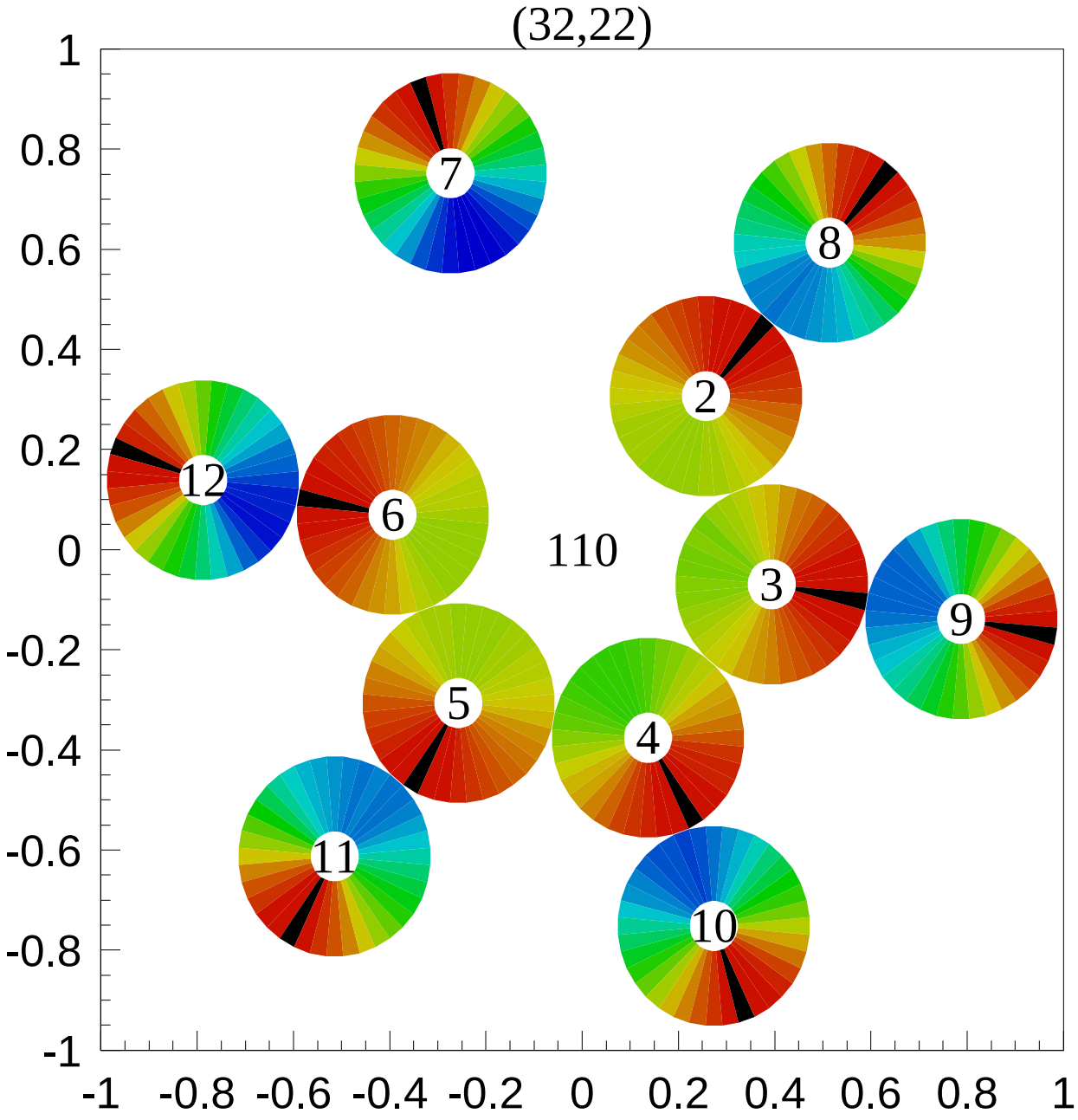

(32,1)
tilted LEDs
average of 6
average of 12
llh
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

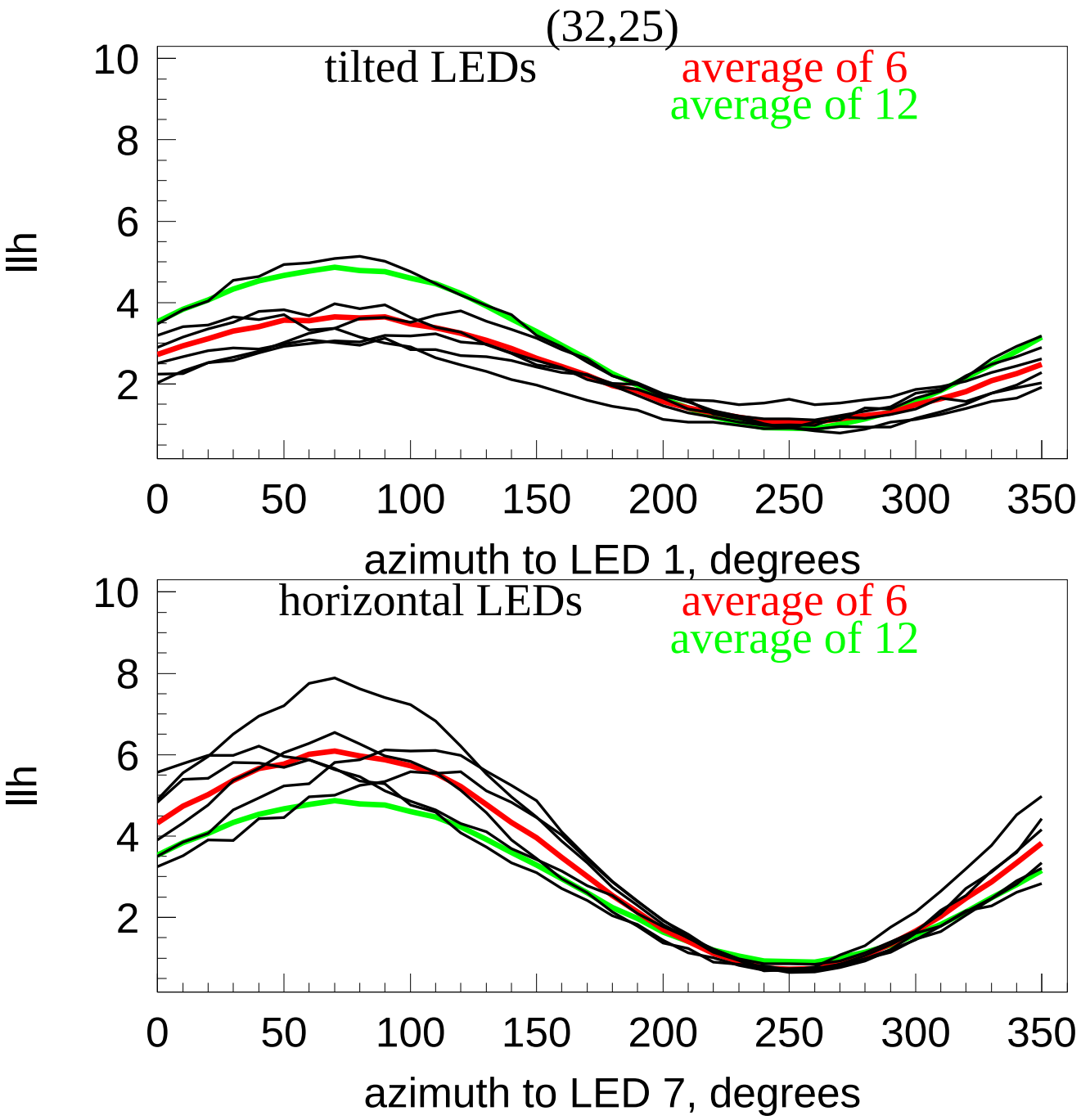

(32,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
7
6
8
2
70
5
11
3
4
9
10

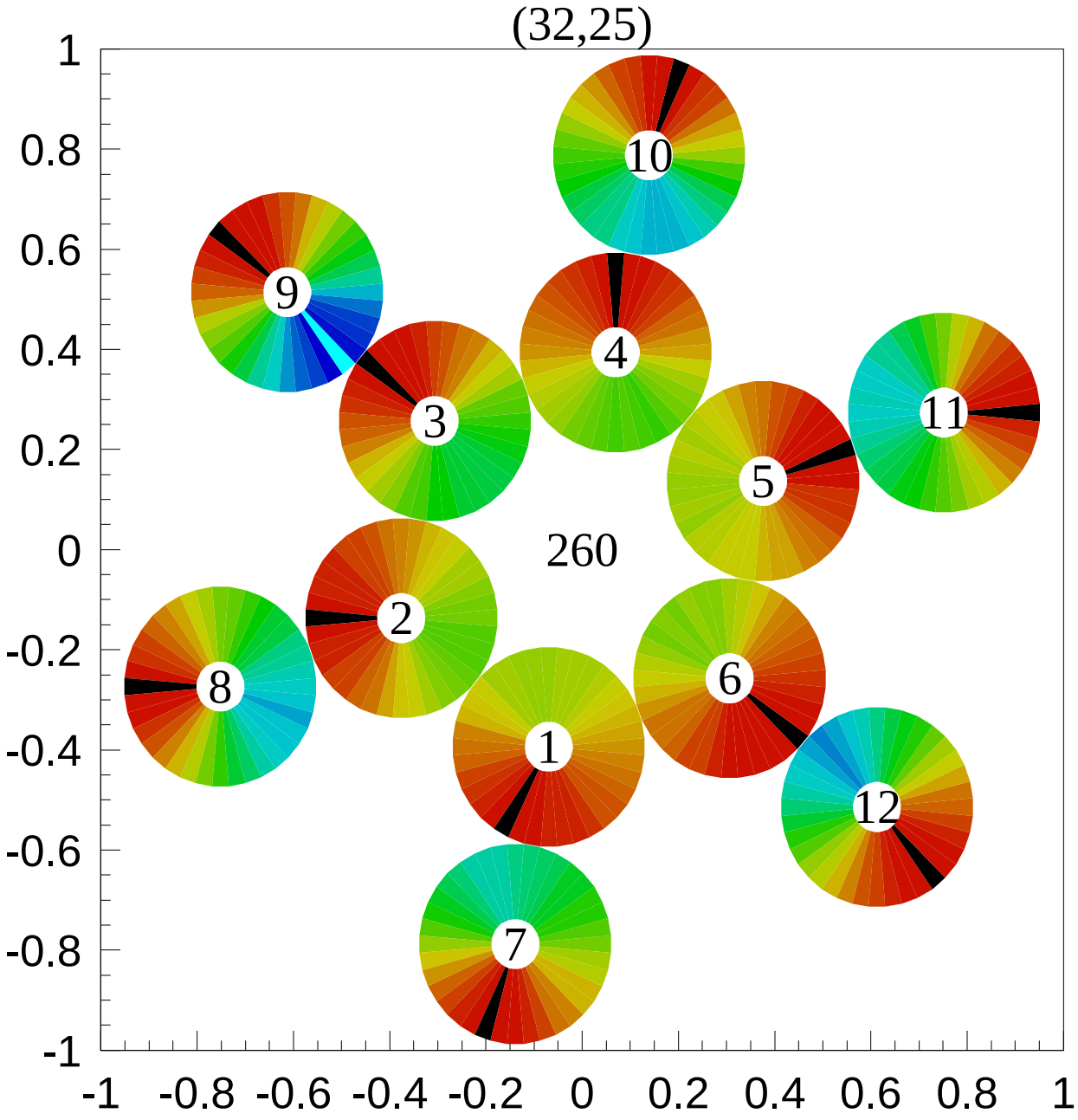

(32,21)
tilted LEDs
average of 6
average of 12
Ilh
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

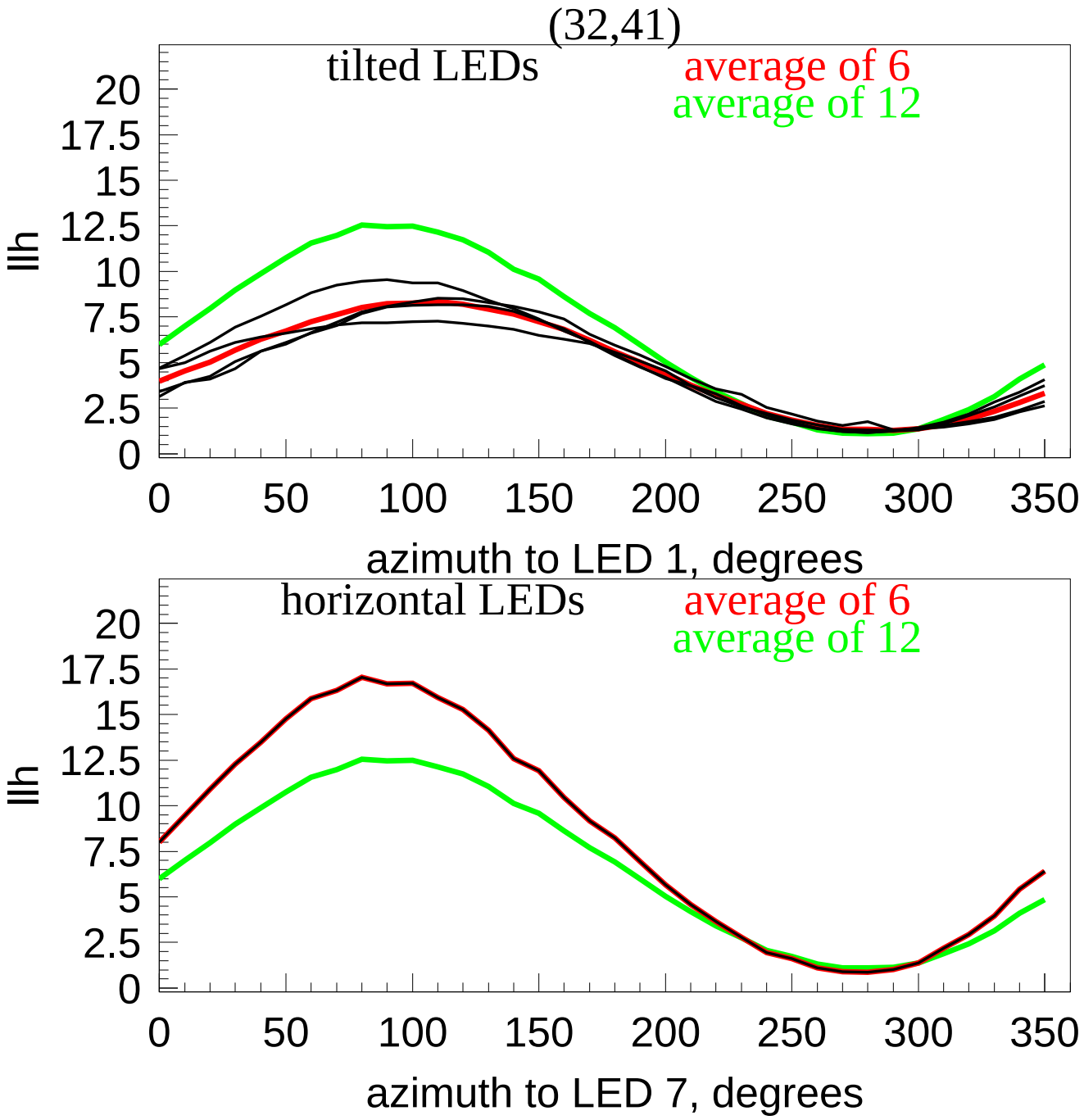

(32,21)
130
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

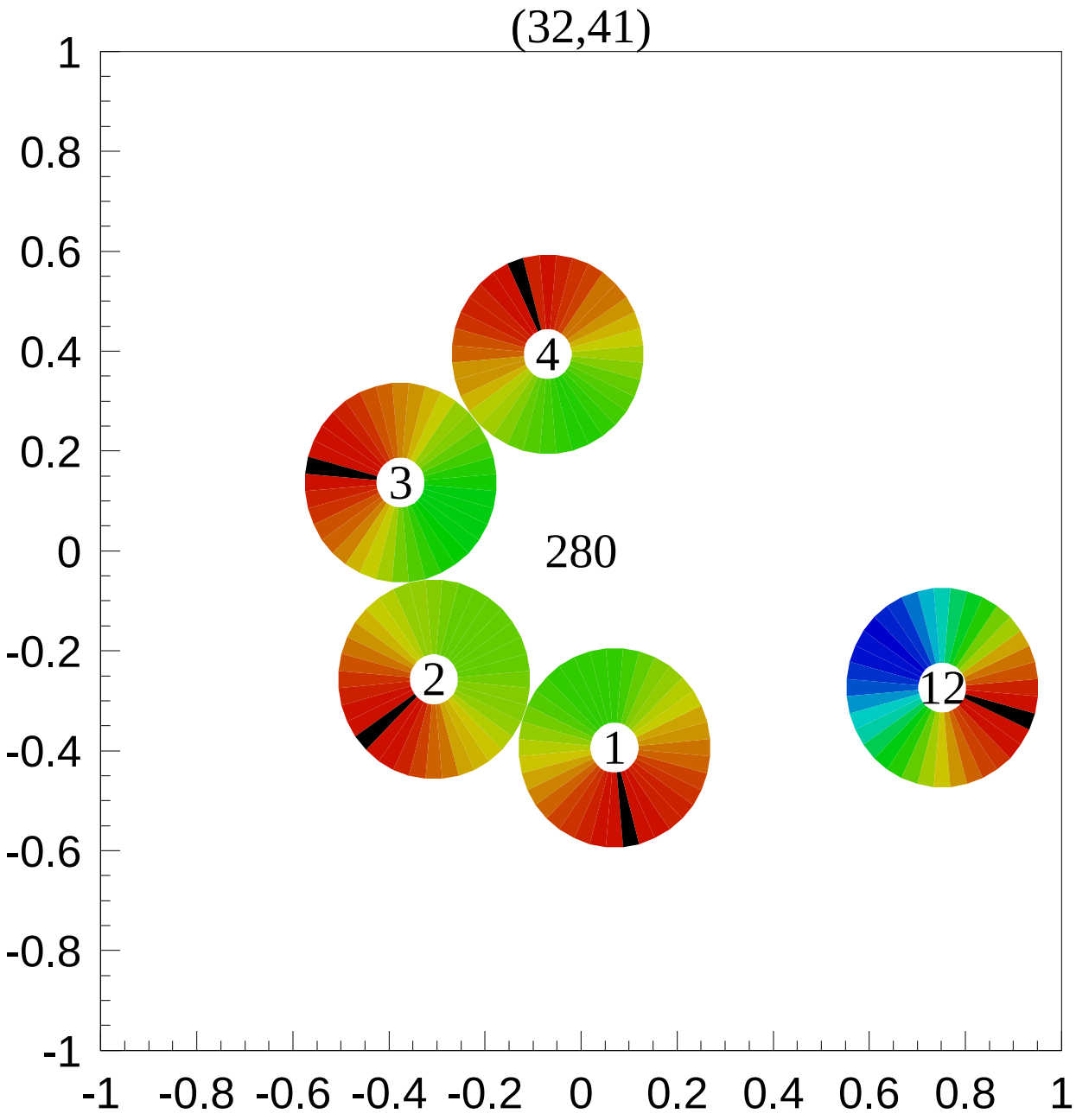

(32,22)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

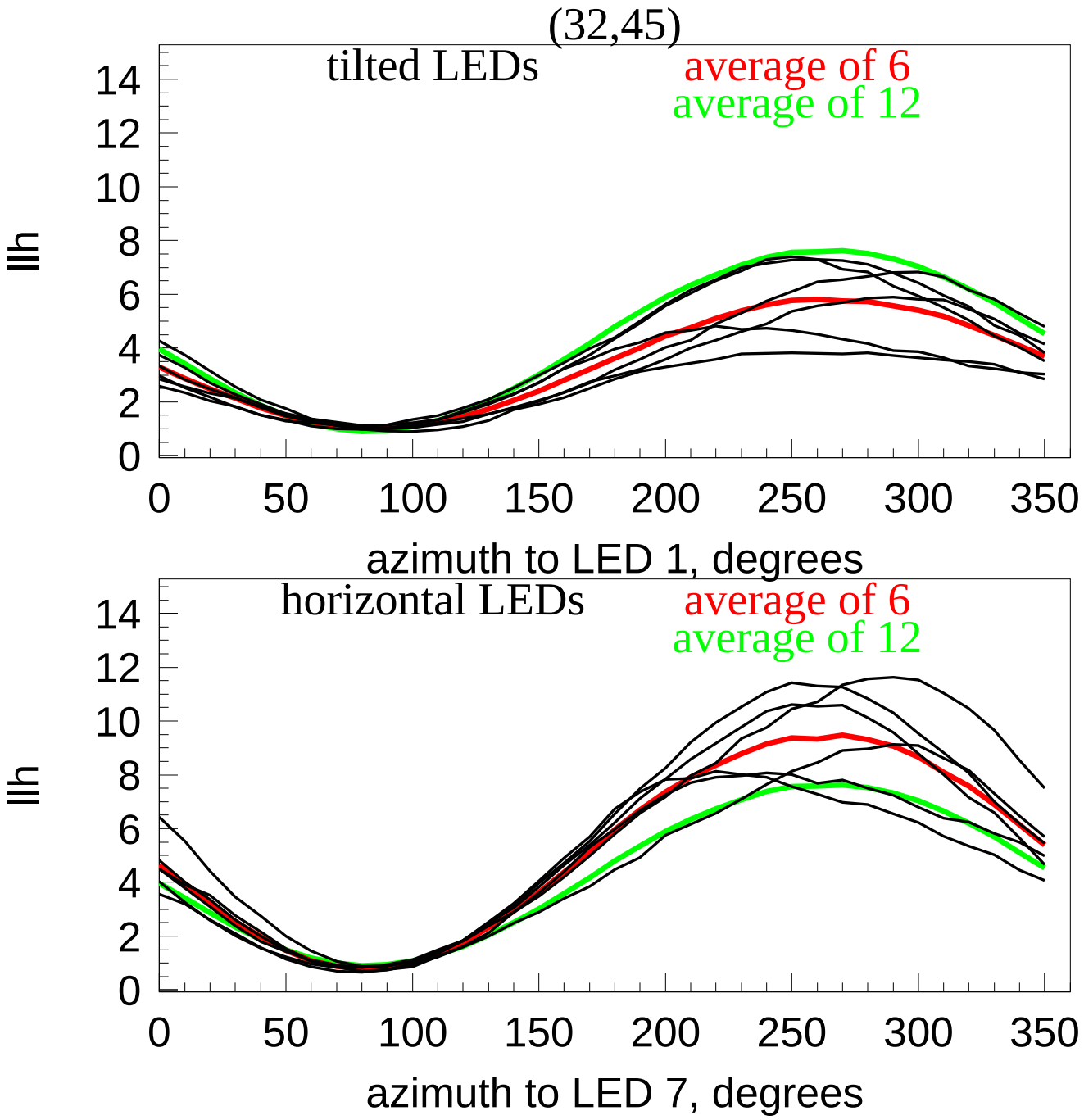

(32,22)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
2
12
6
110
3
9
5
4
11
10

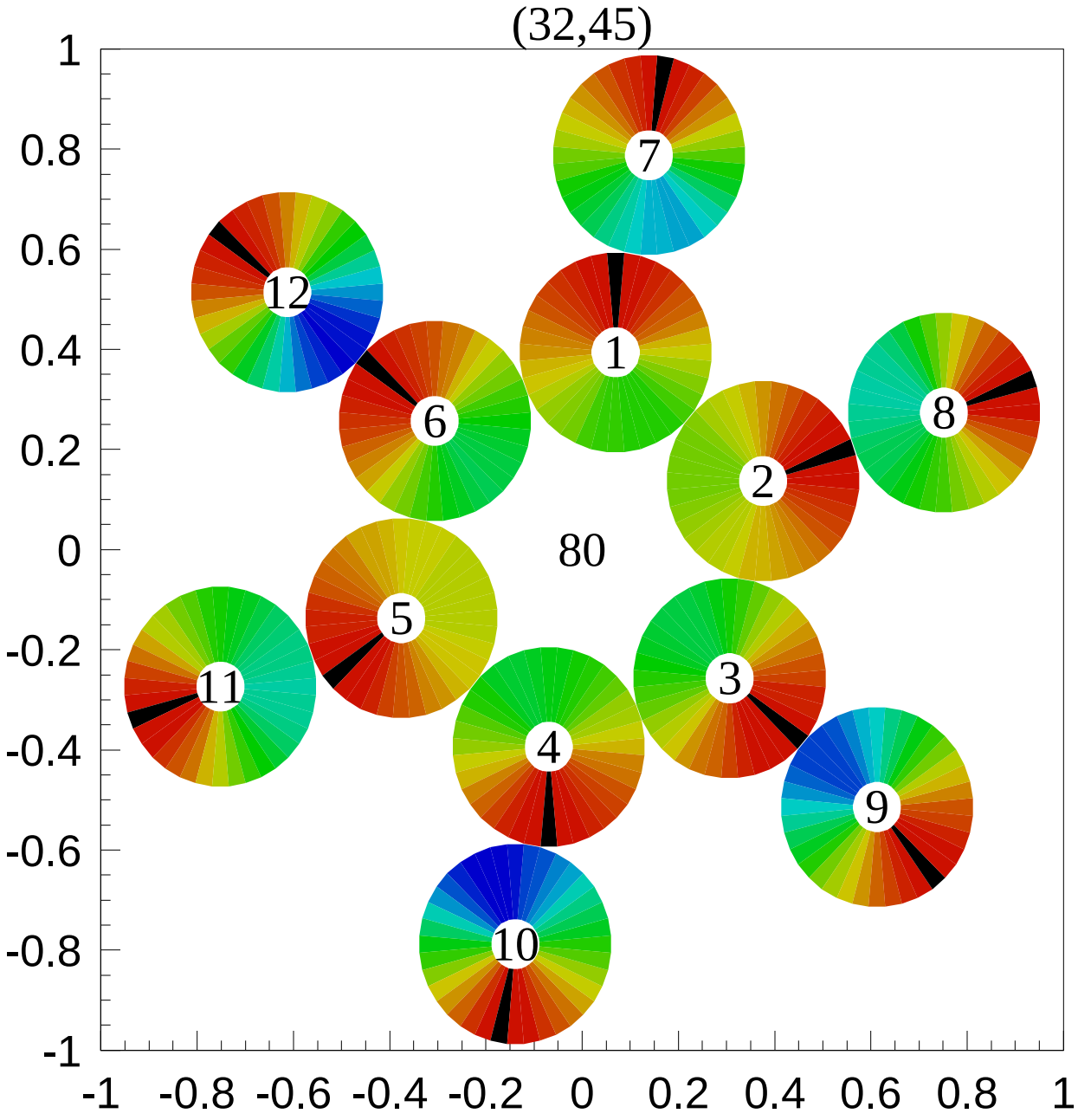

(32,25)
tilted LEDs
average of 6
average of 12
Ilh
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

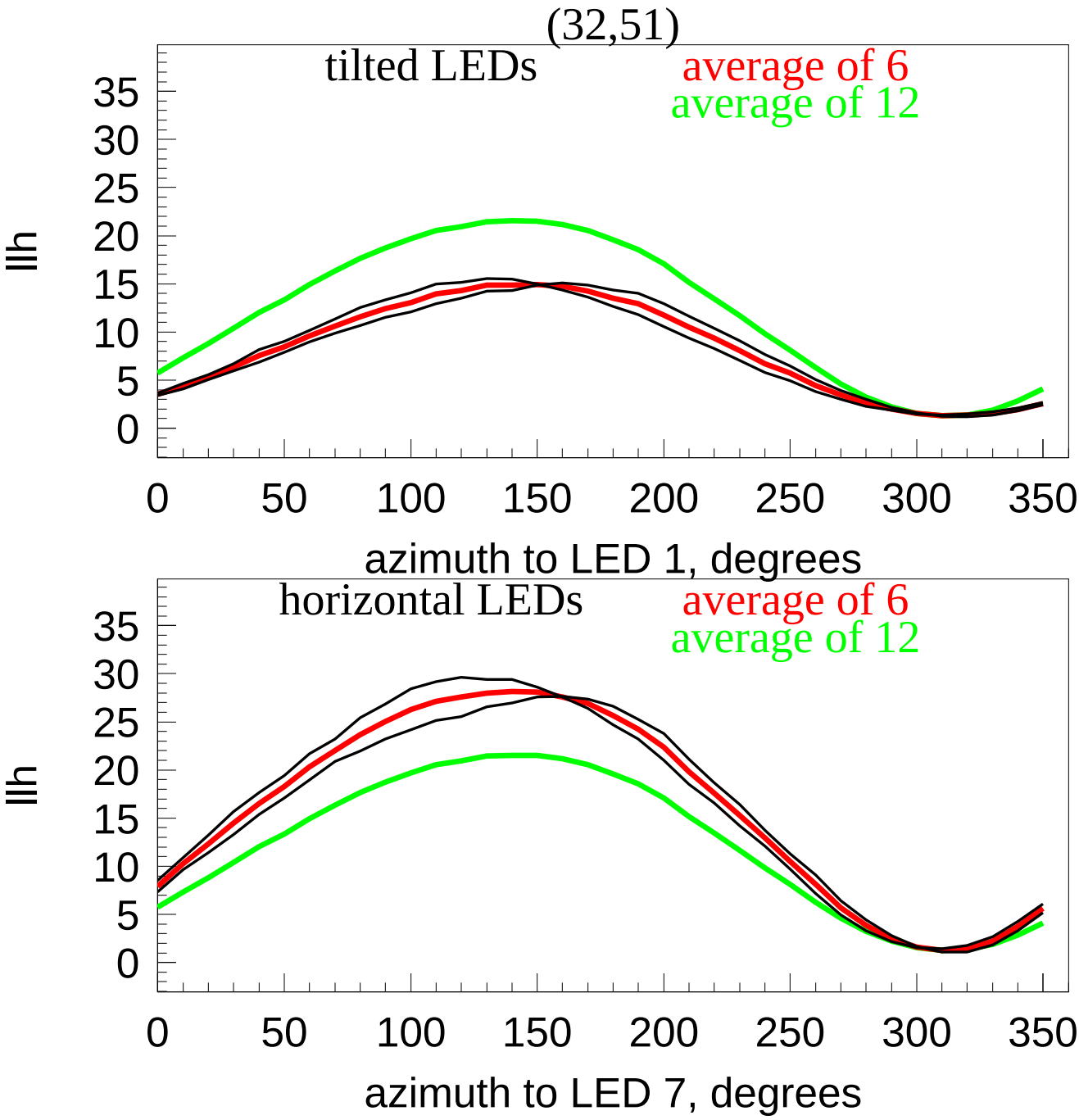

(32,25)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
9
4
3
11
5
260
2
8
6
1
12
7

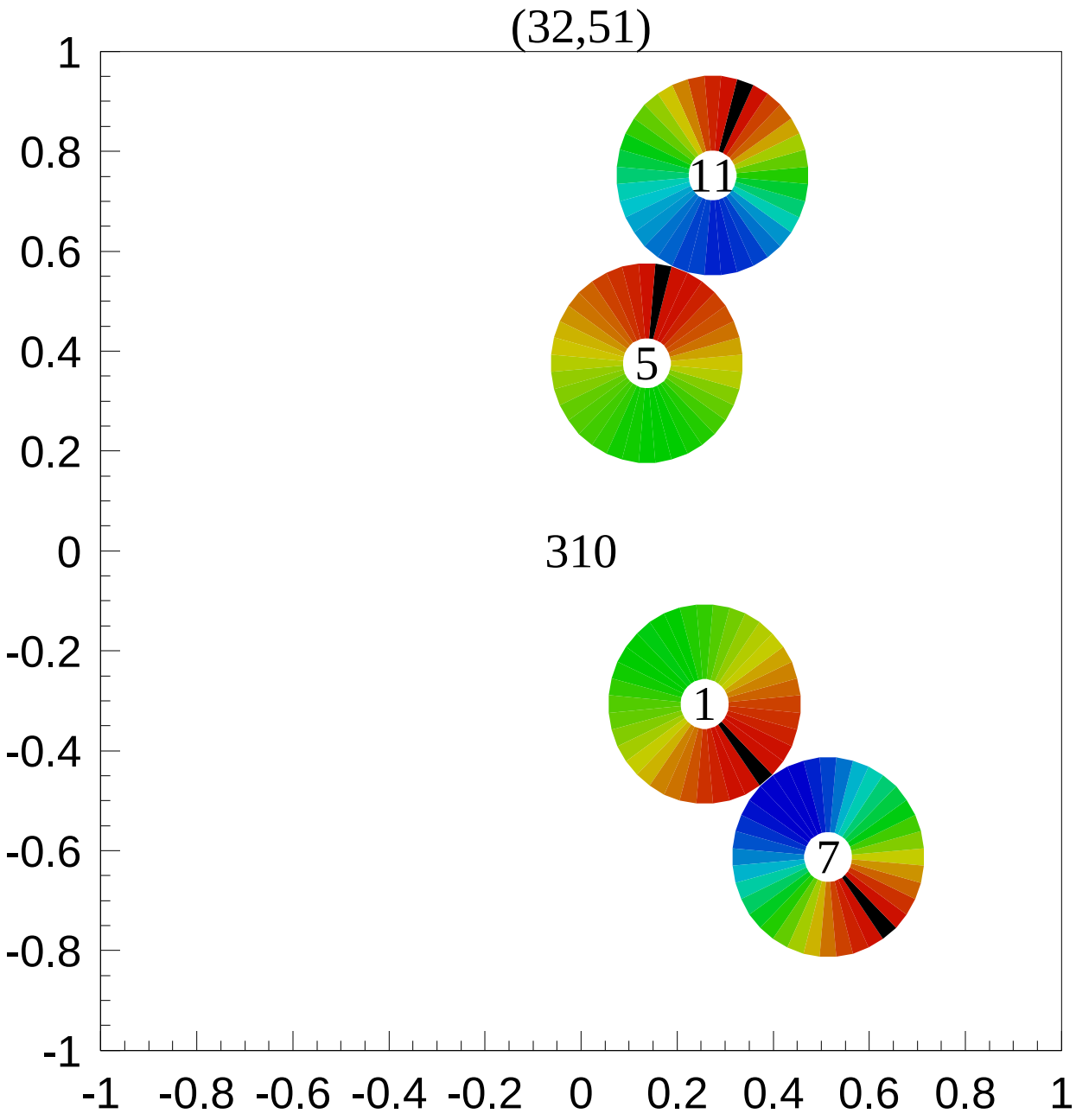

(32,41)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

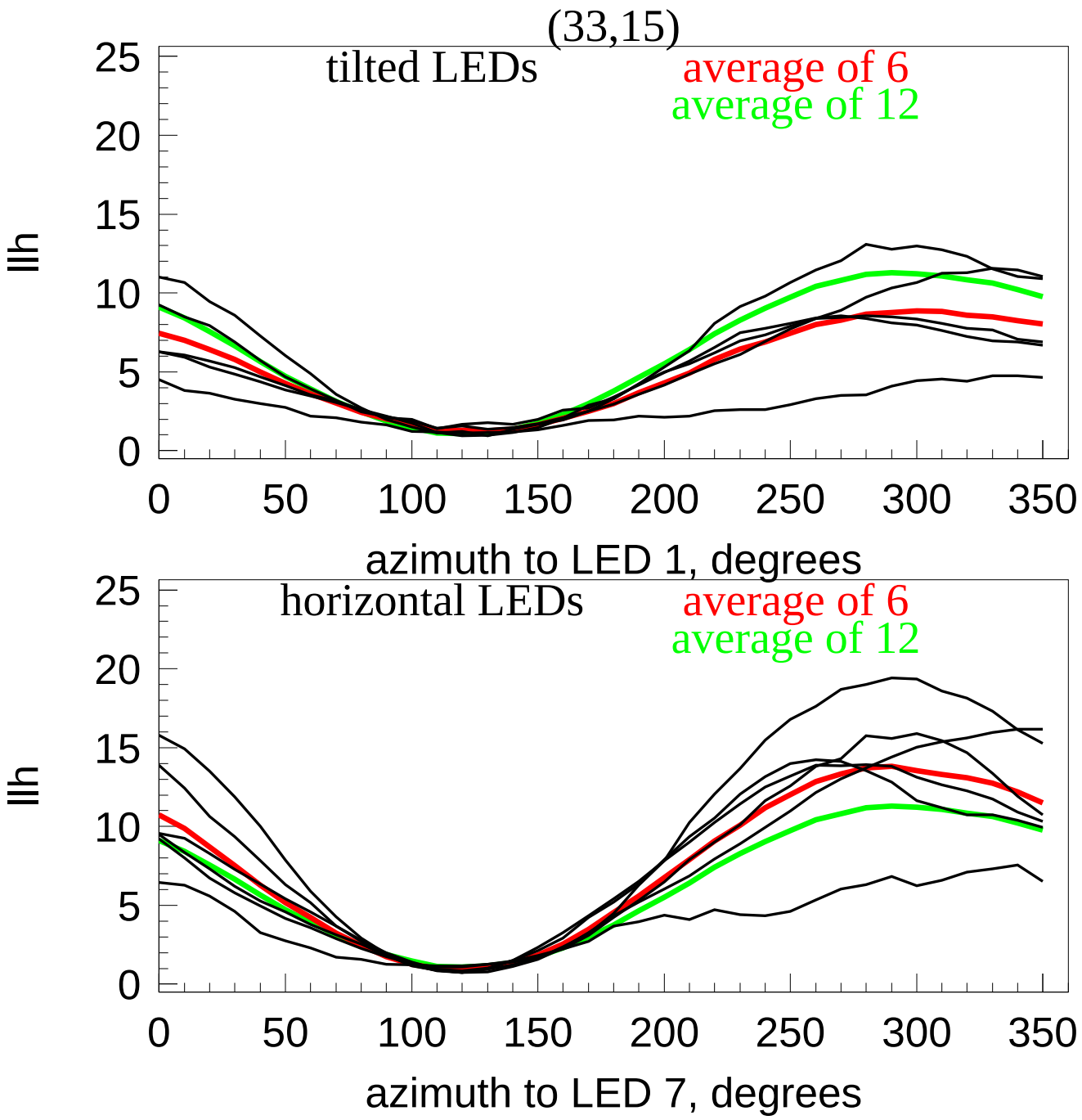

(32,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
4
3
280
2
1
12

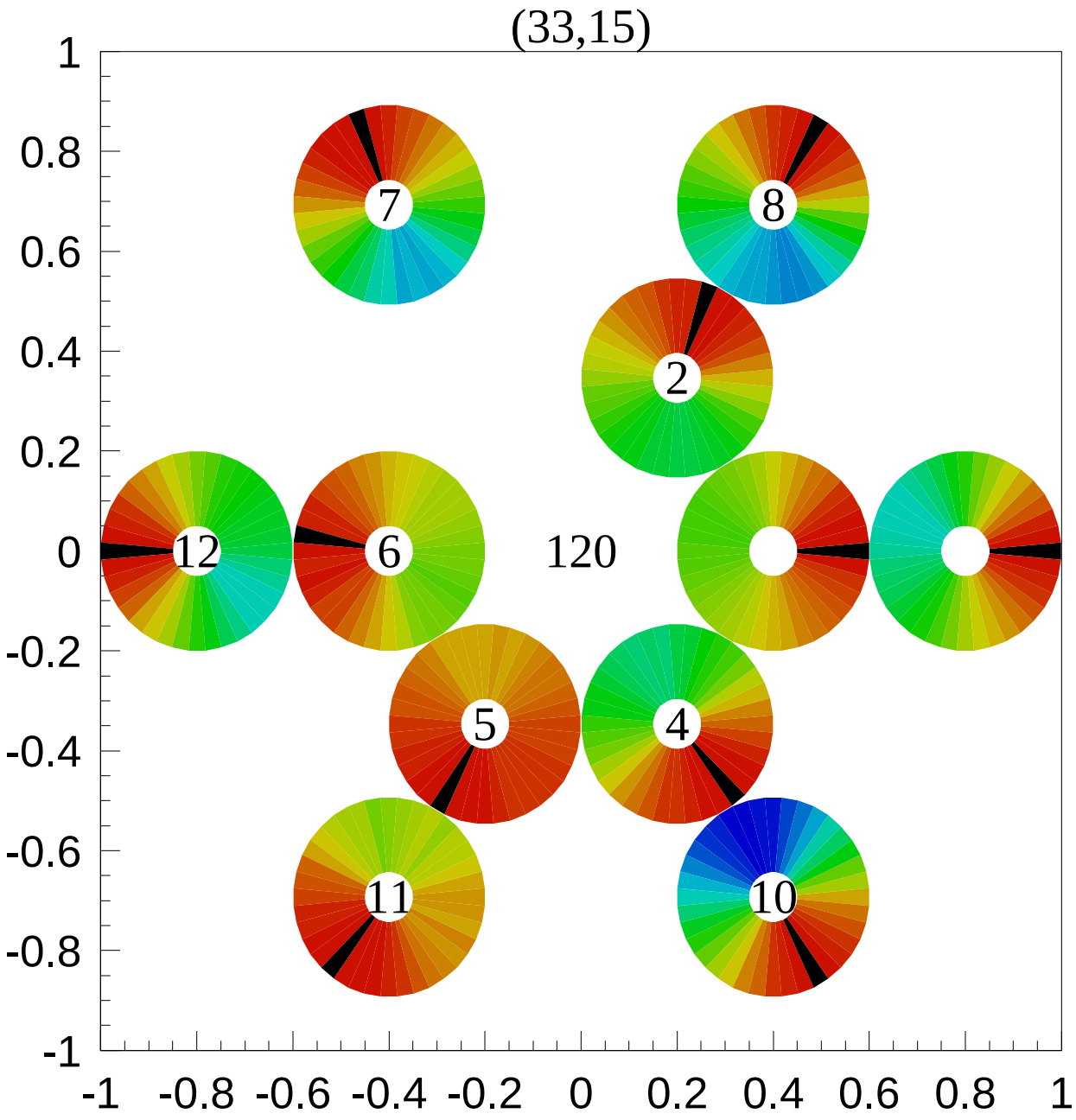

(32,45)
tilted LEDs
average of 6
average of 12
Ilh
0
2
4
6
8
10
12
14
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

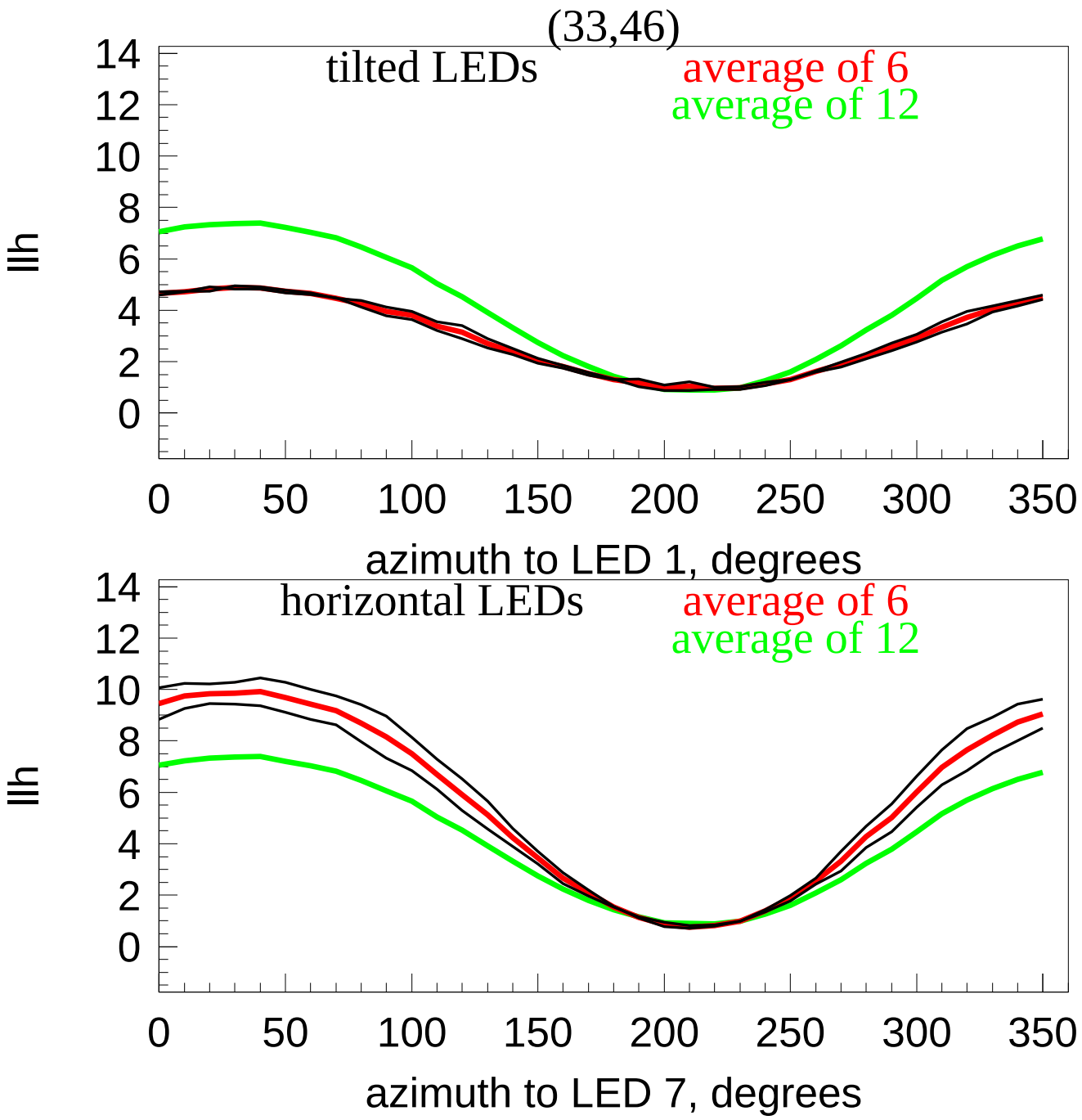

(32,45)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
12
1
6
8
2
80
5
11
3
4
9
10

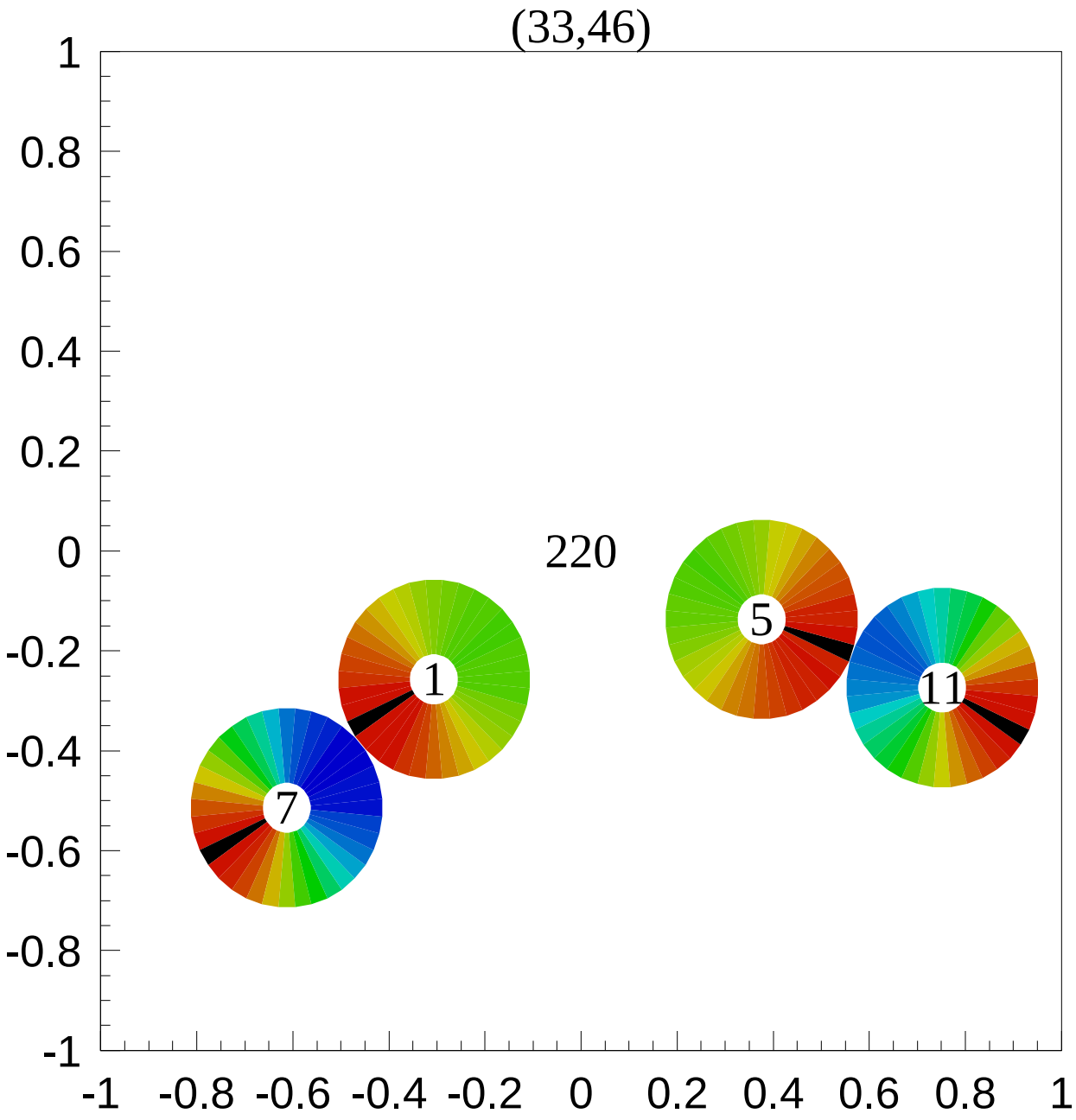

(32,51)
tilted LEDs
average of 6
average of 12
Ilh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

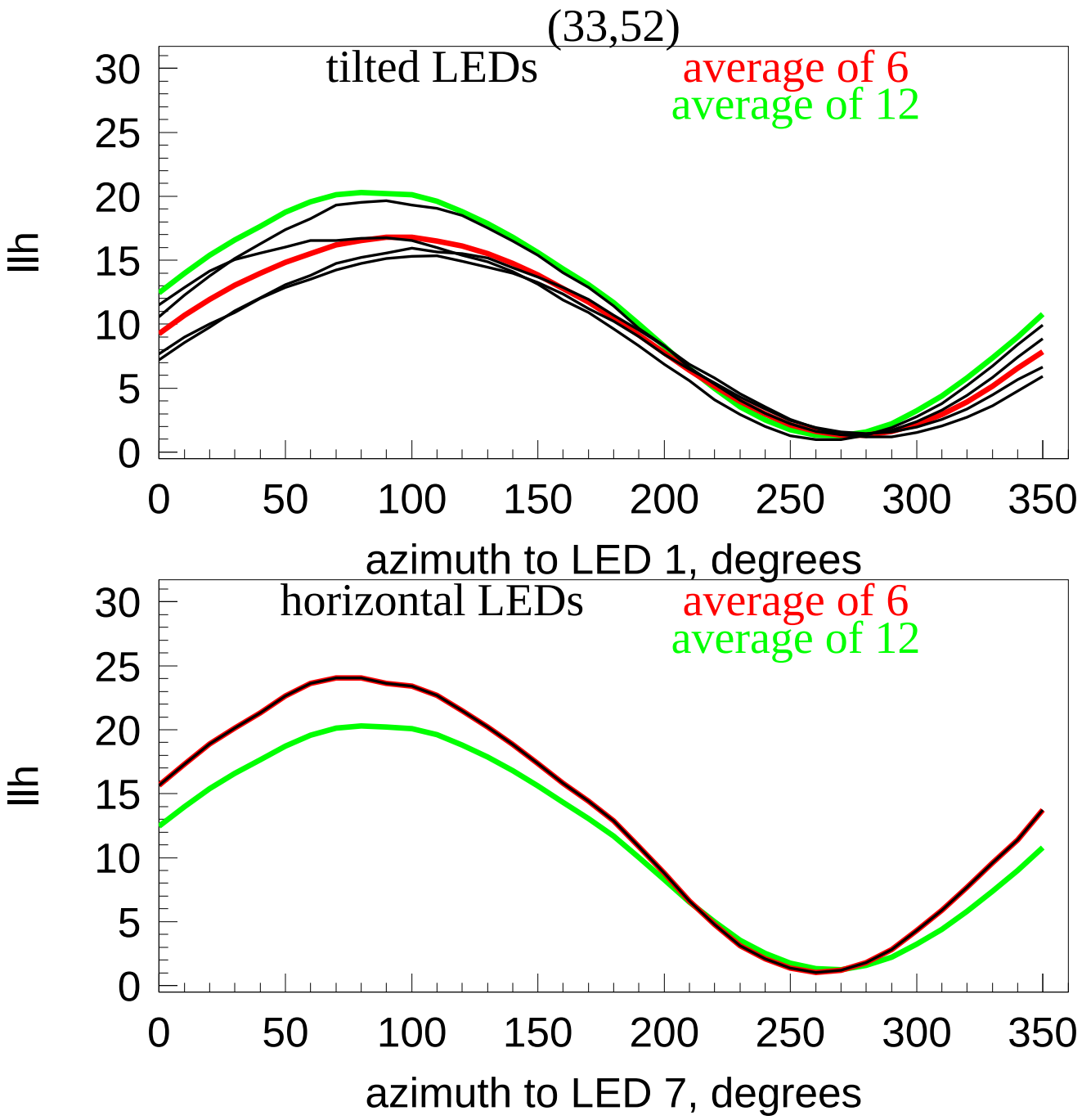

(32,51)
11
5
310
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

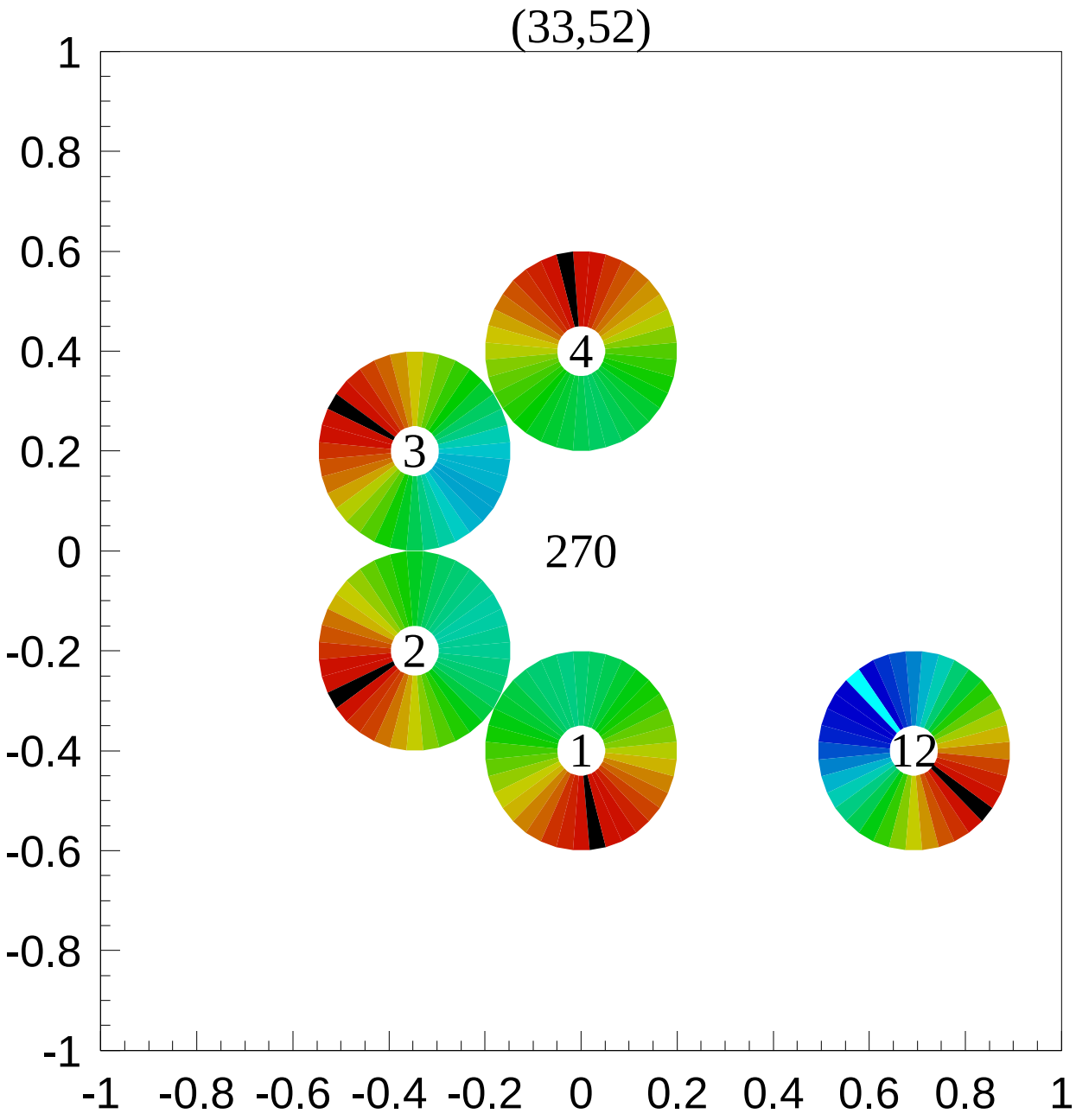

(33,15)
tilted LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

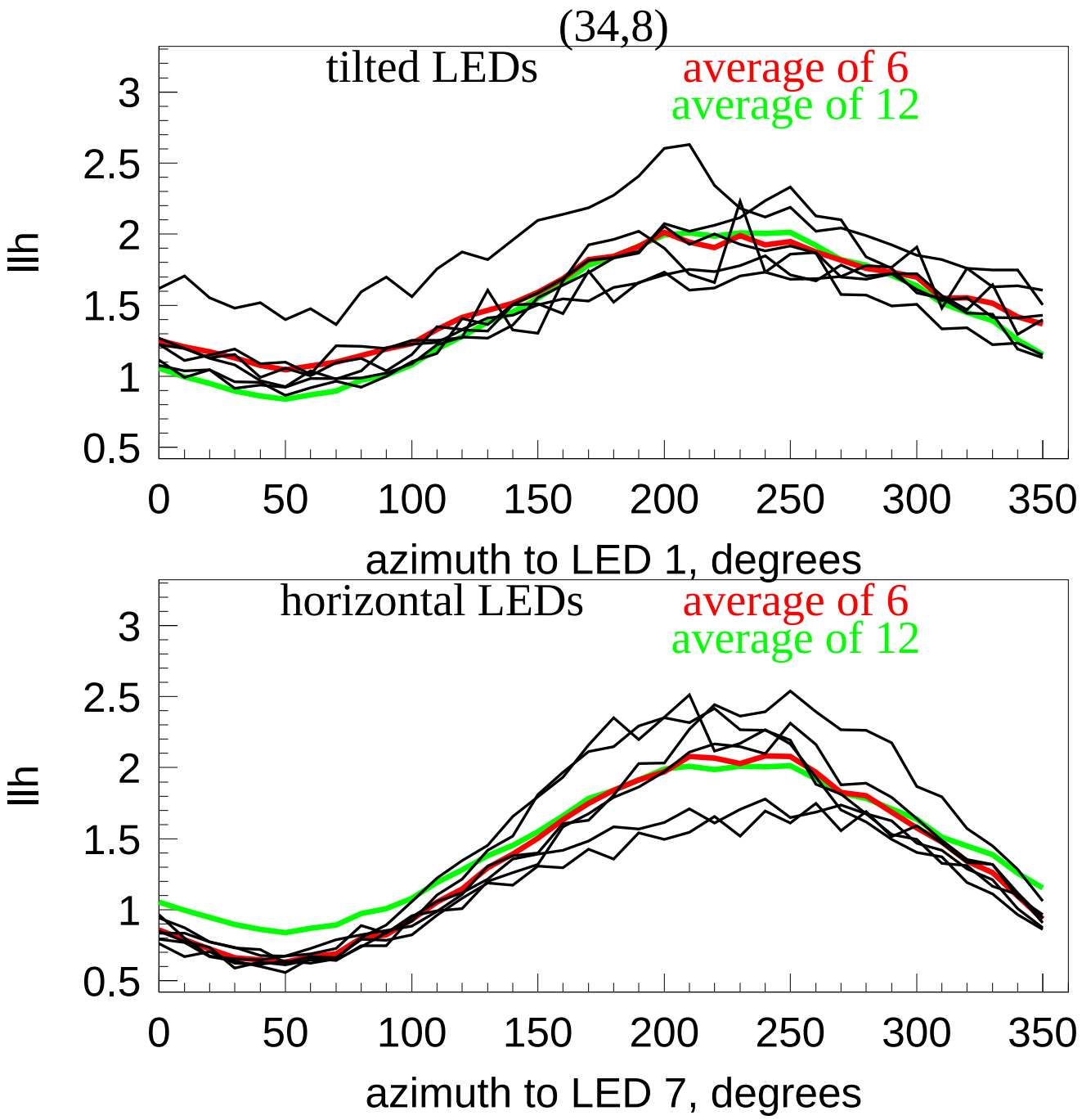

(33,15)
7
8
2
12
6
120
5
4
11
10
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

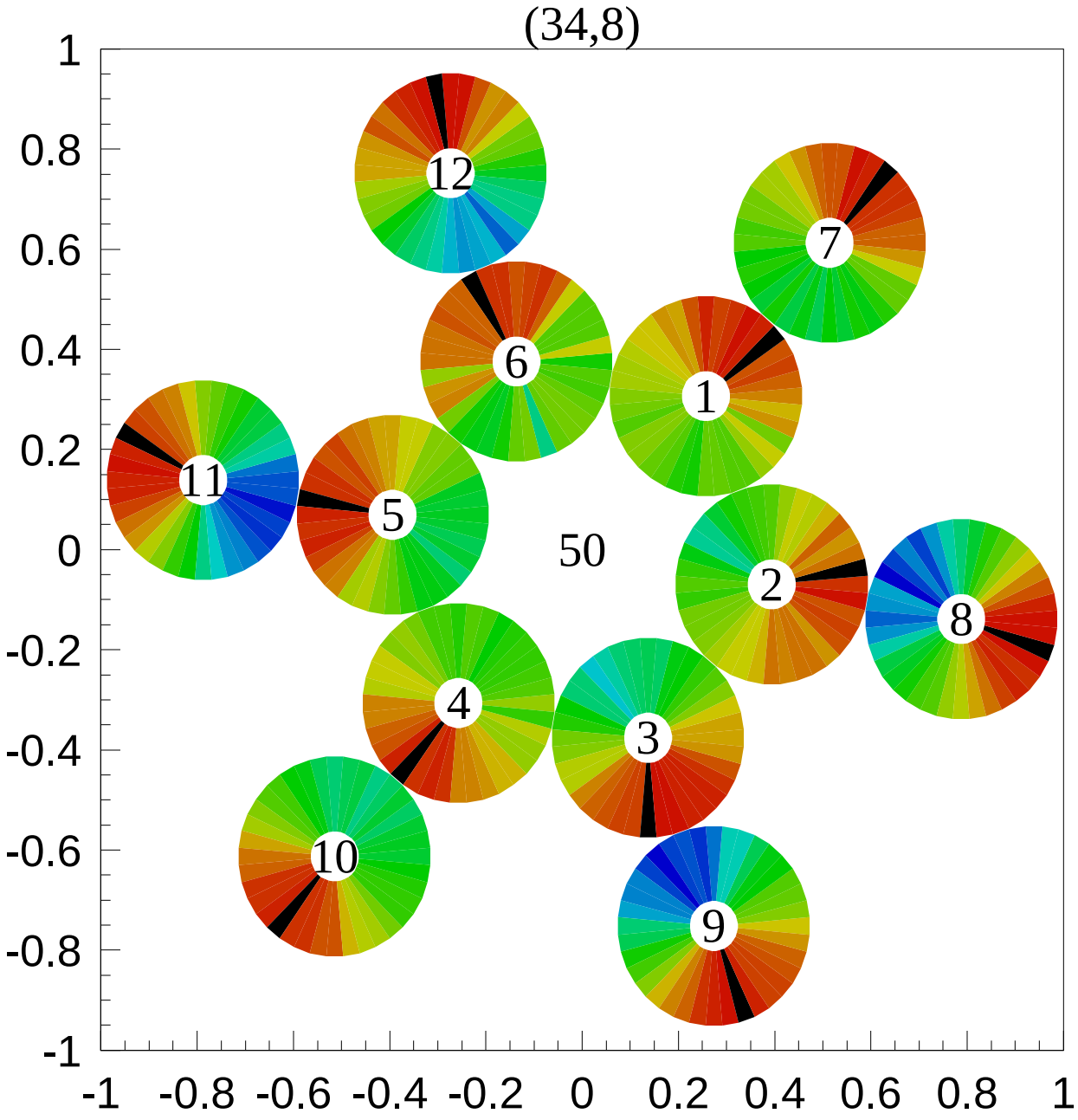

(33,46)
tilted LEDs
average of 6
average of 12
IIh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
IIh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

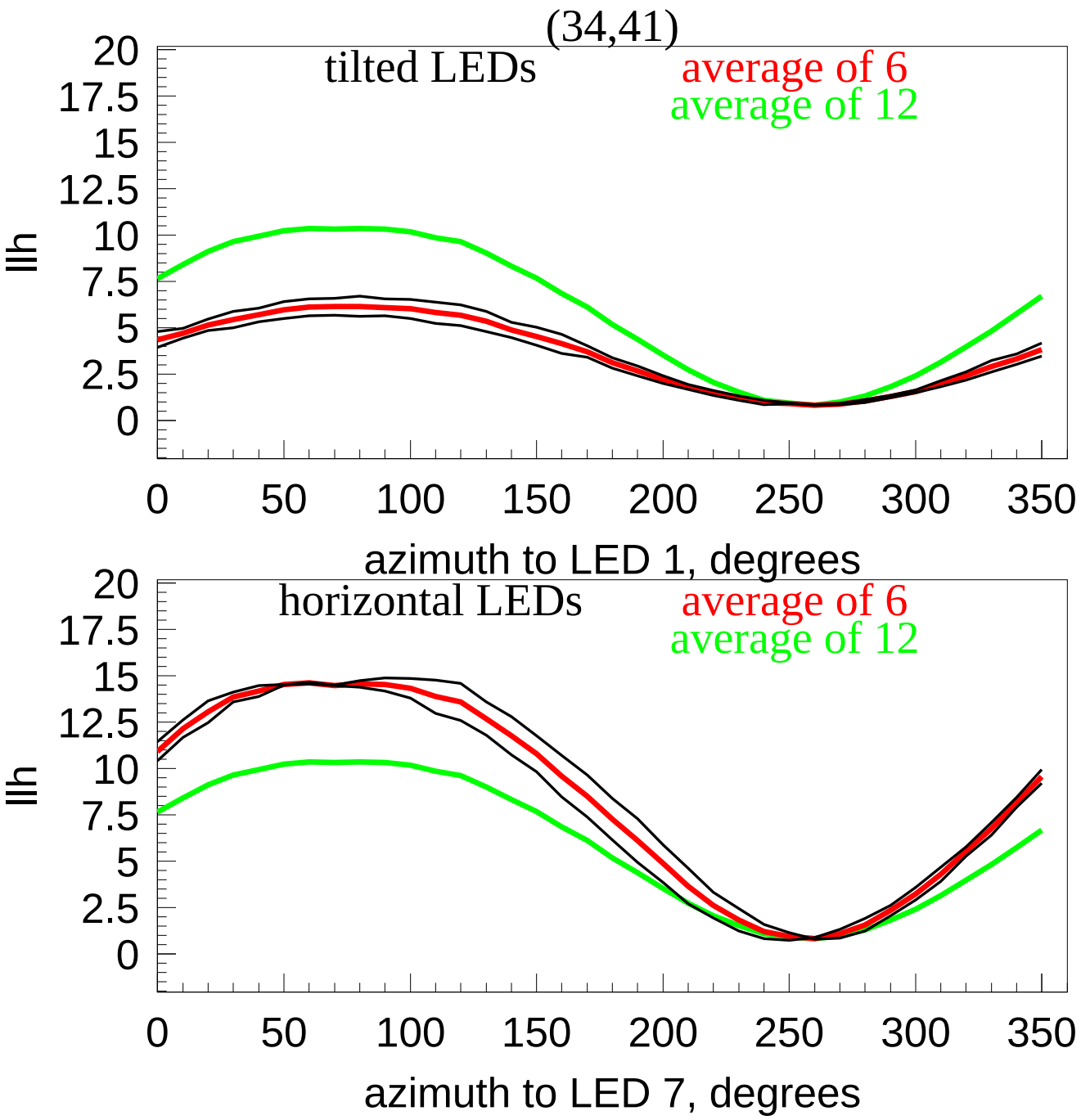

(33,46)
220
1
5
11
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

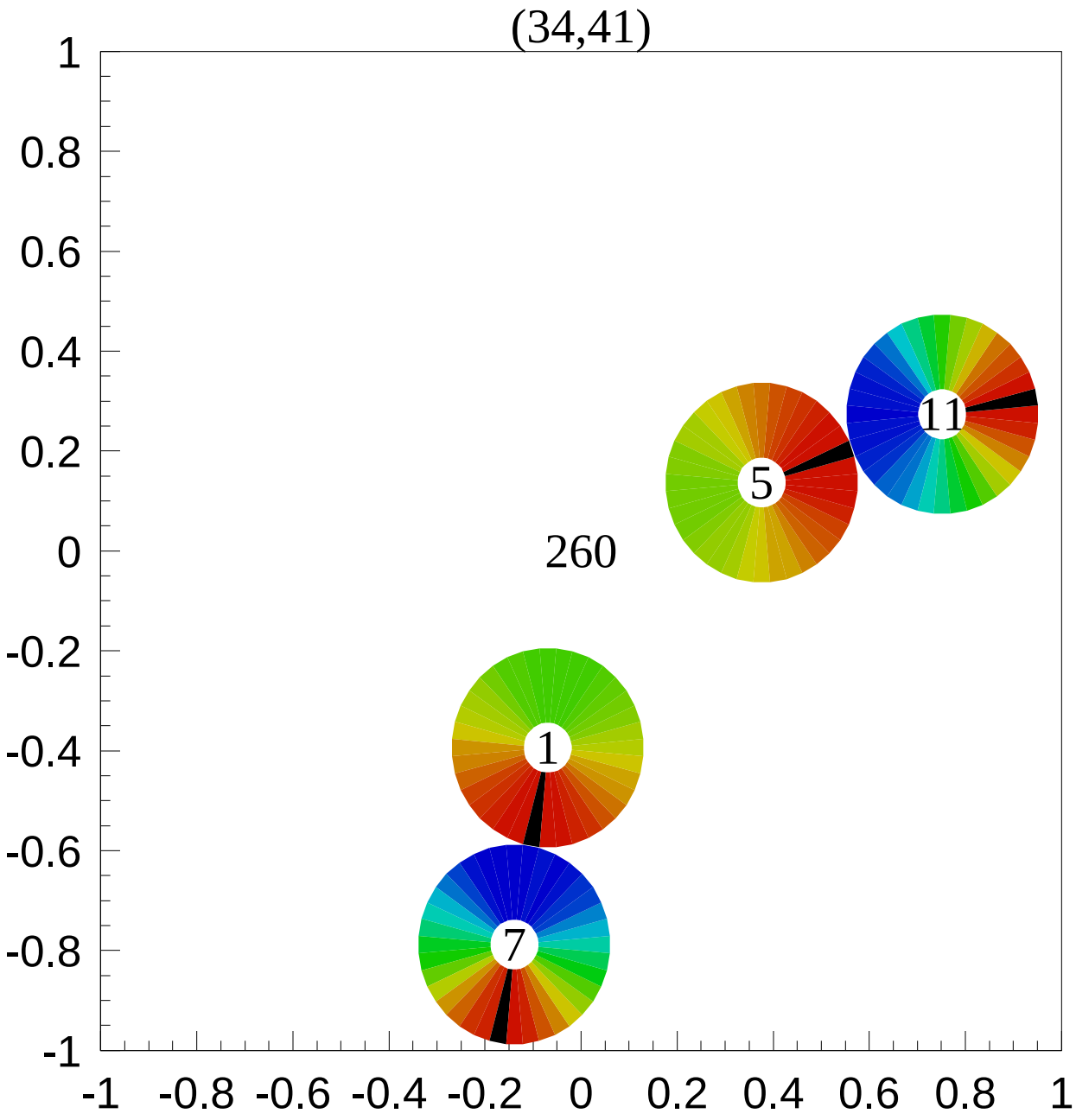

(33,52)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

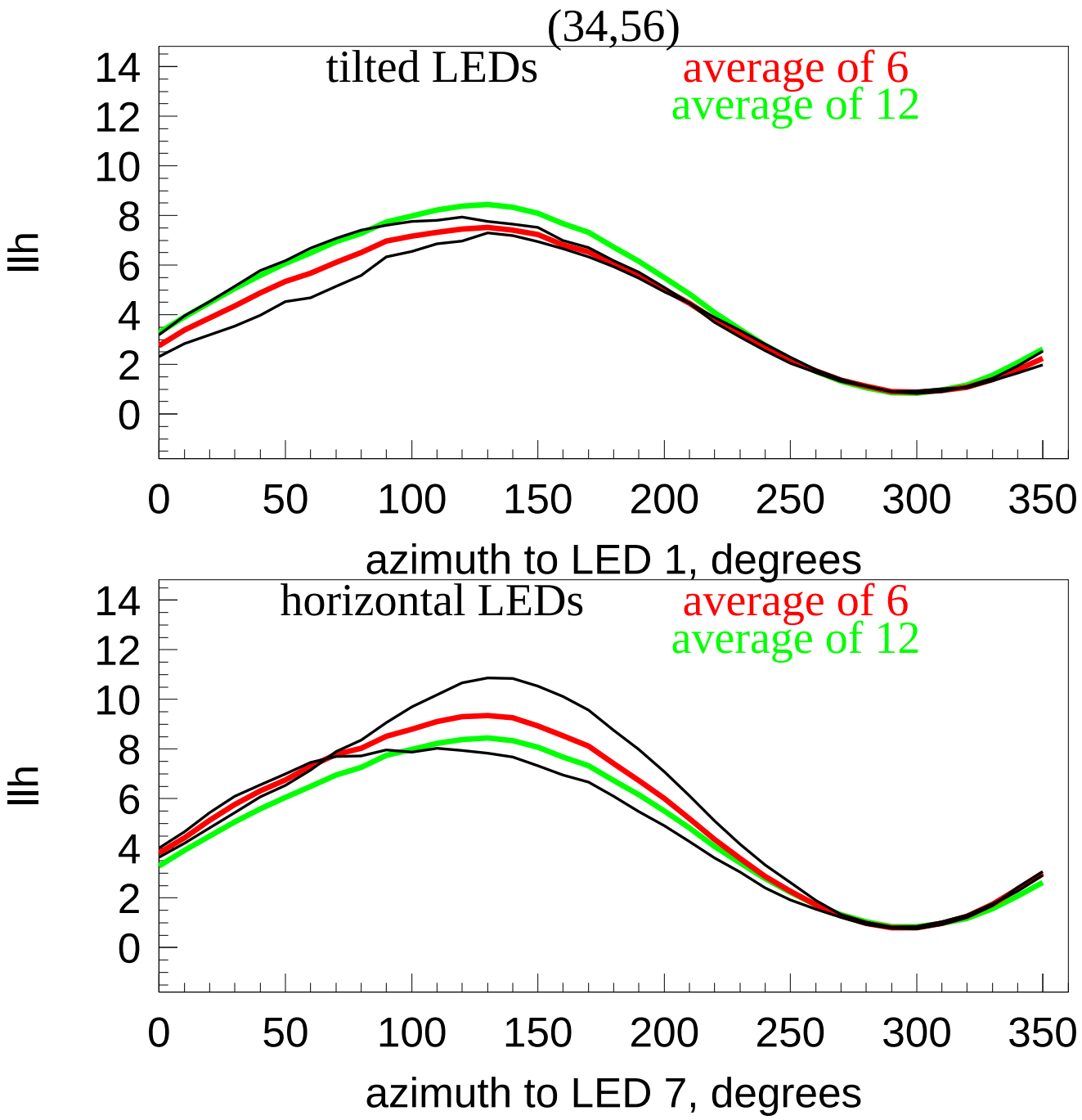

(33,52)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
4
3
270
2
1
12

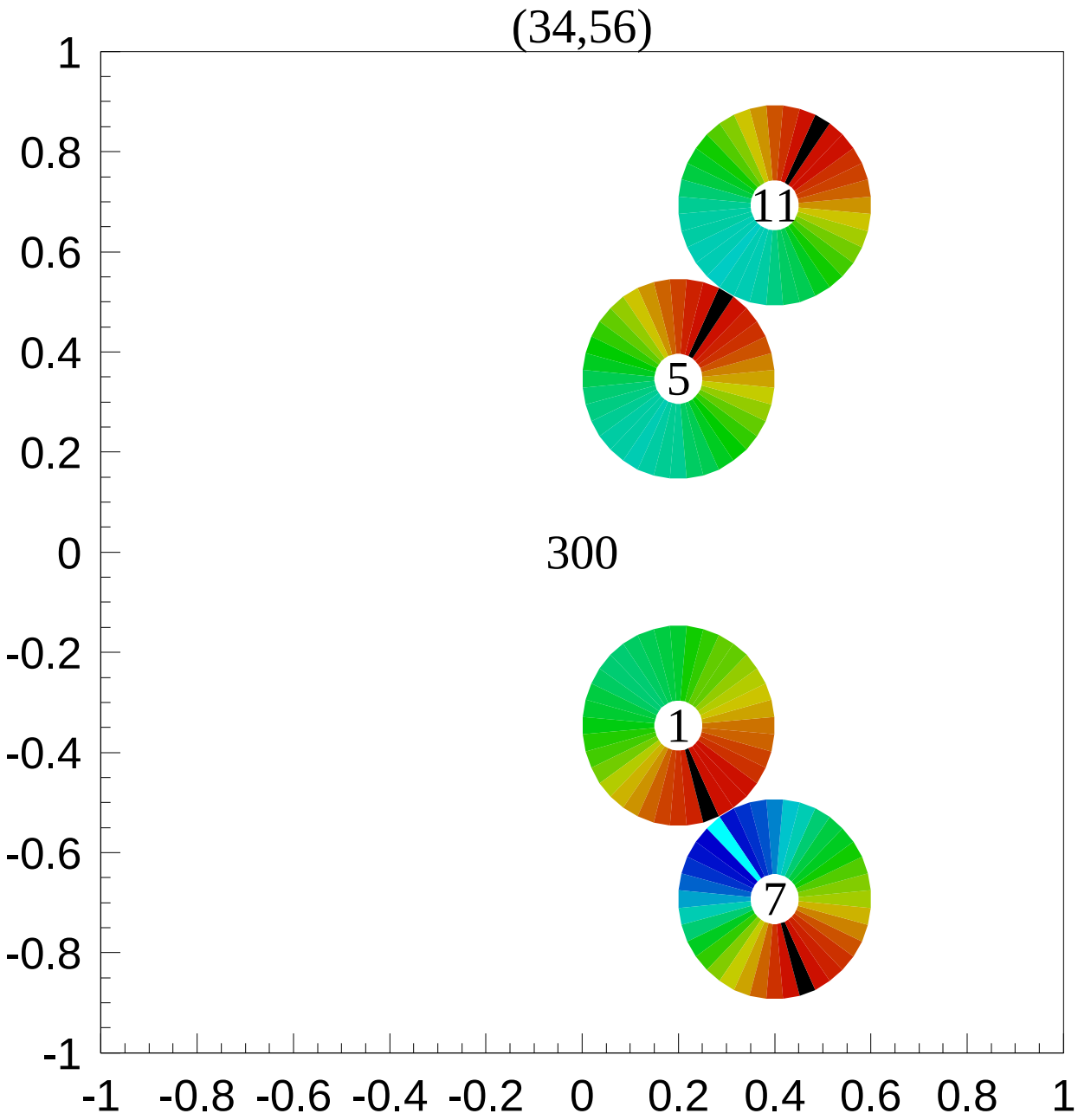

(34,8)
tilted LEDs
average of 6
average of 12
Ilh
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

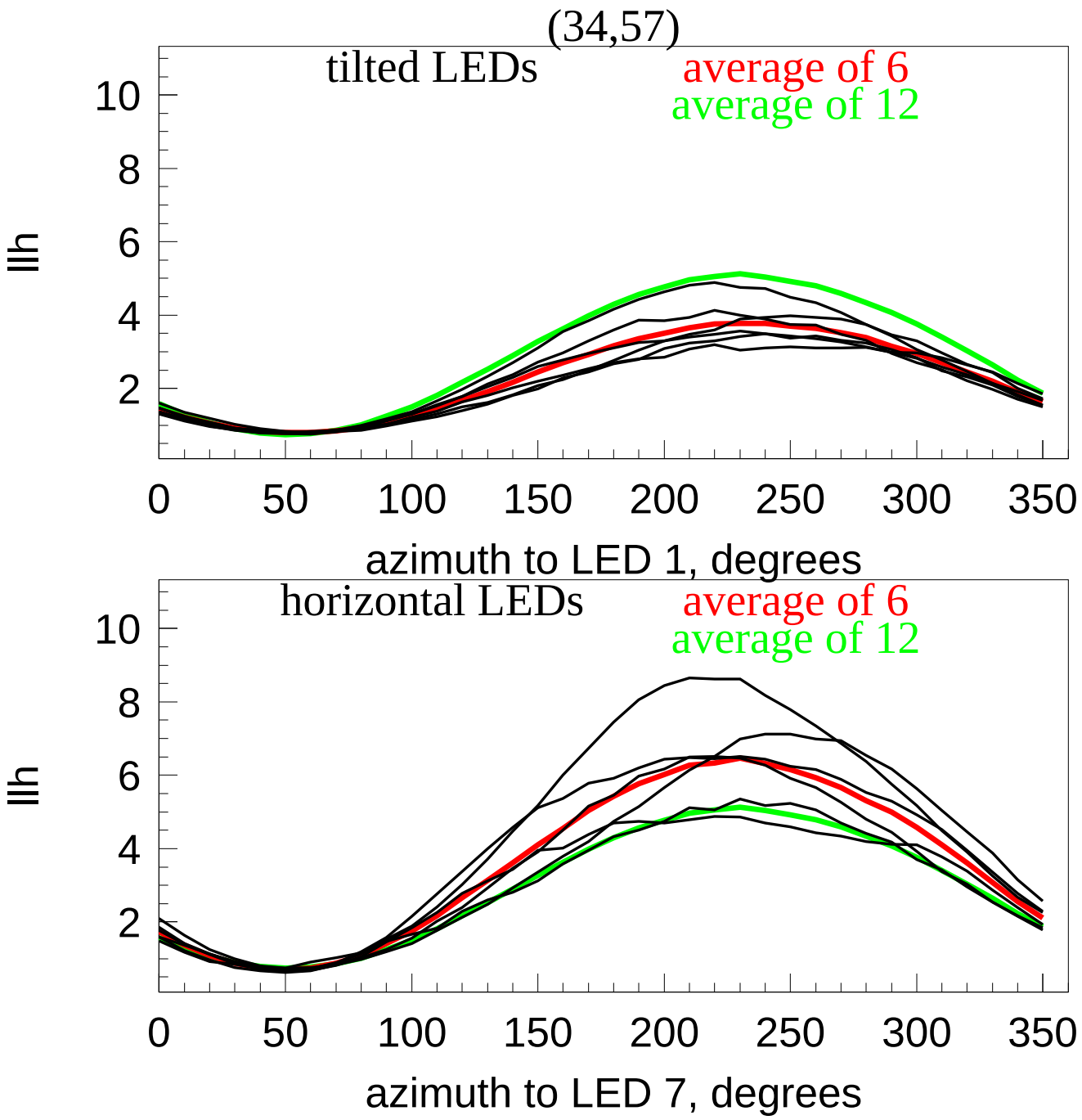

(34,8)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
7
6
1
11
5
50
2
8
4
3
10
9

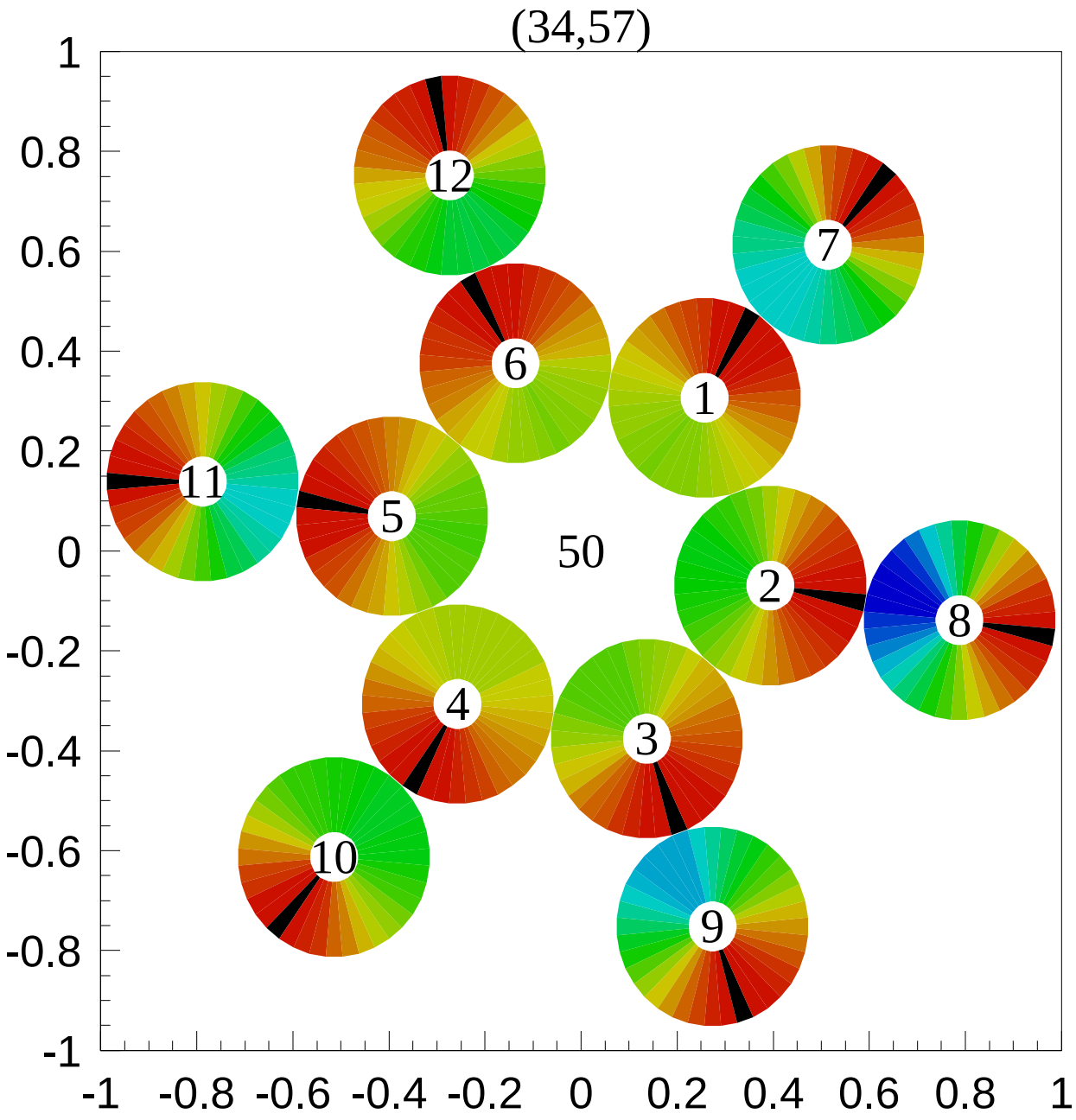

(34,41)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

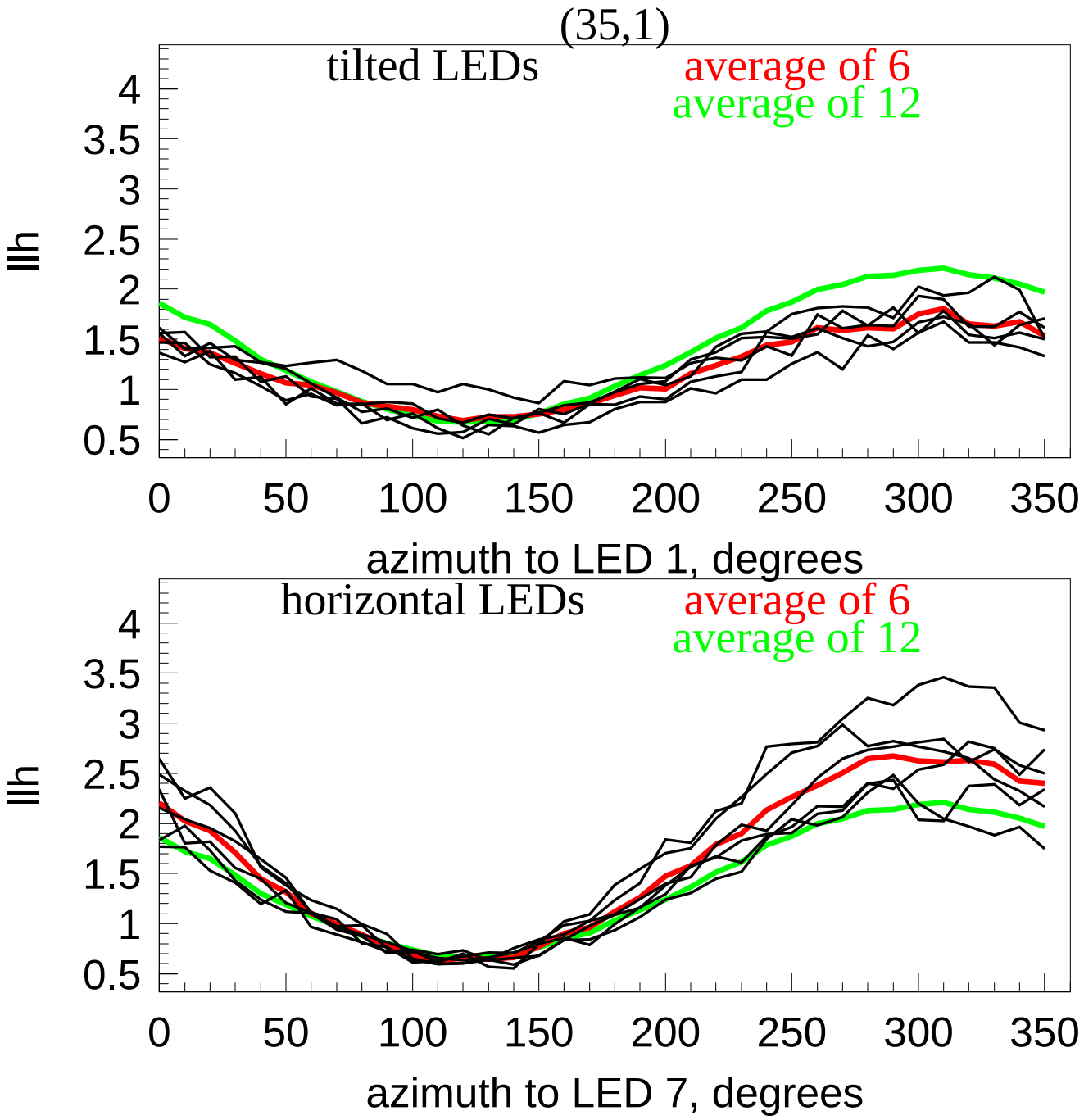

(34,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
260
1
7

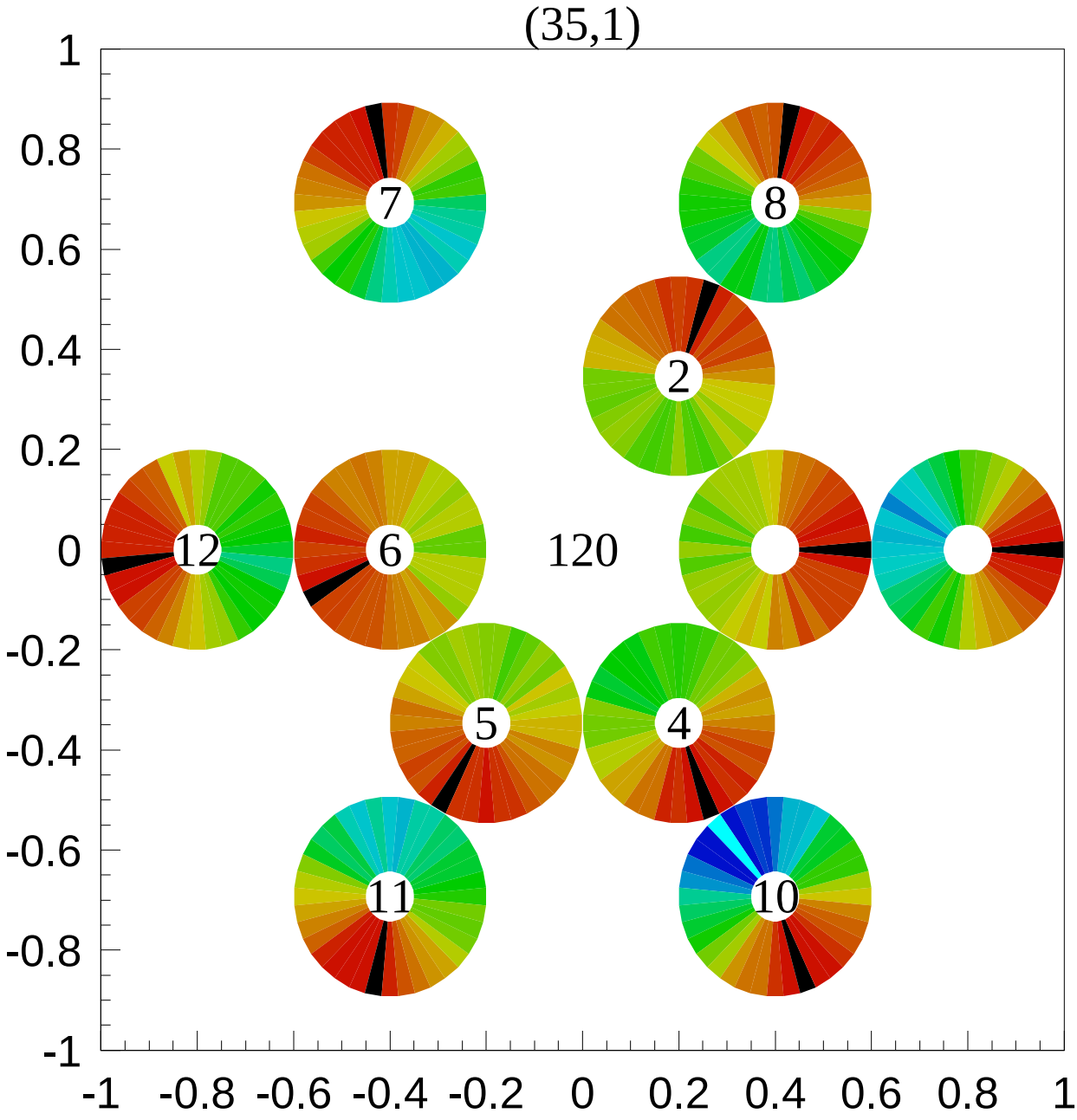

(34,56)
tilted LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

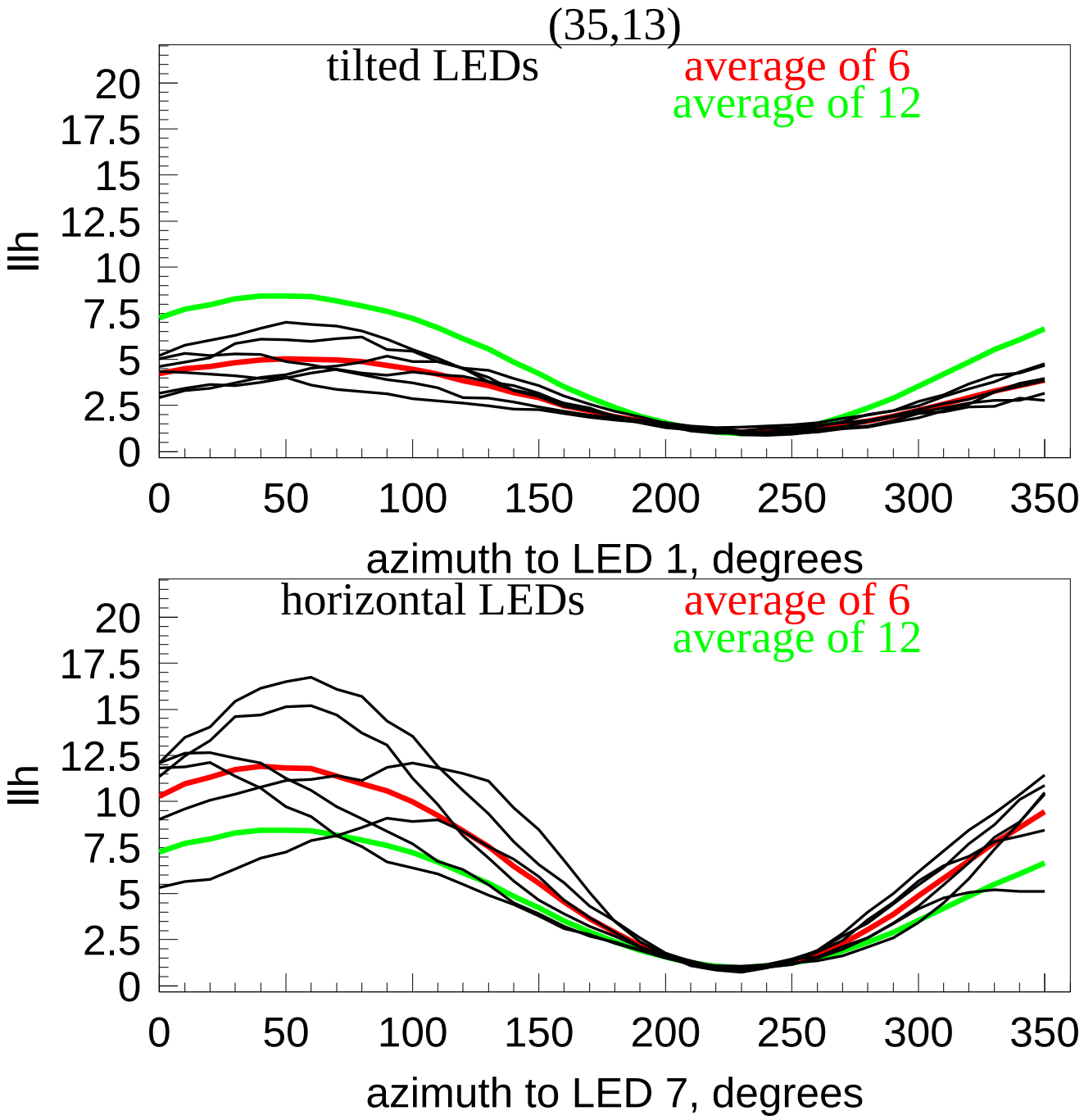

(34,56)
11
5
300
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

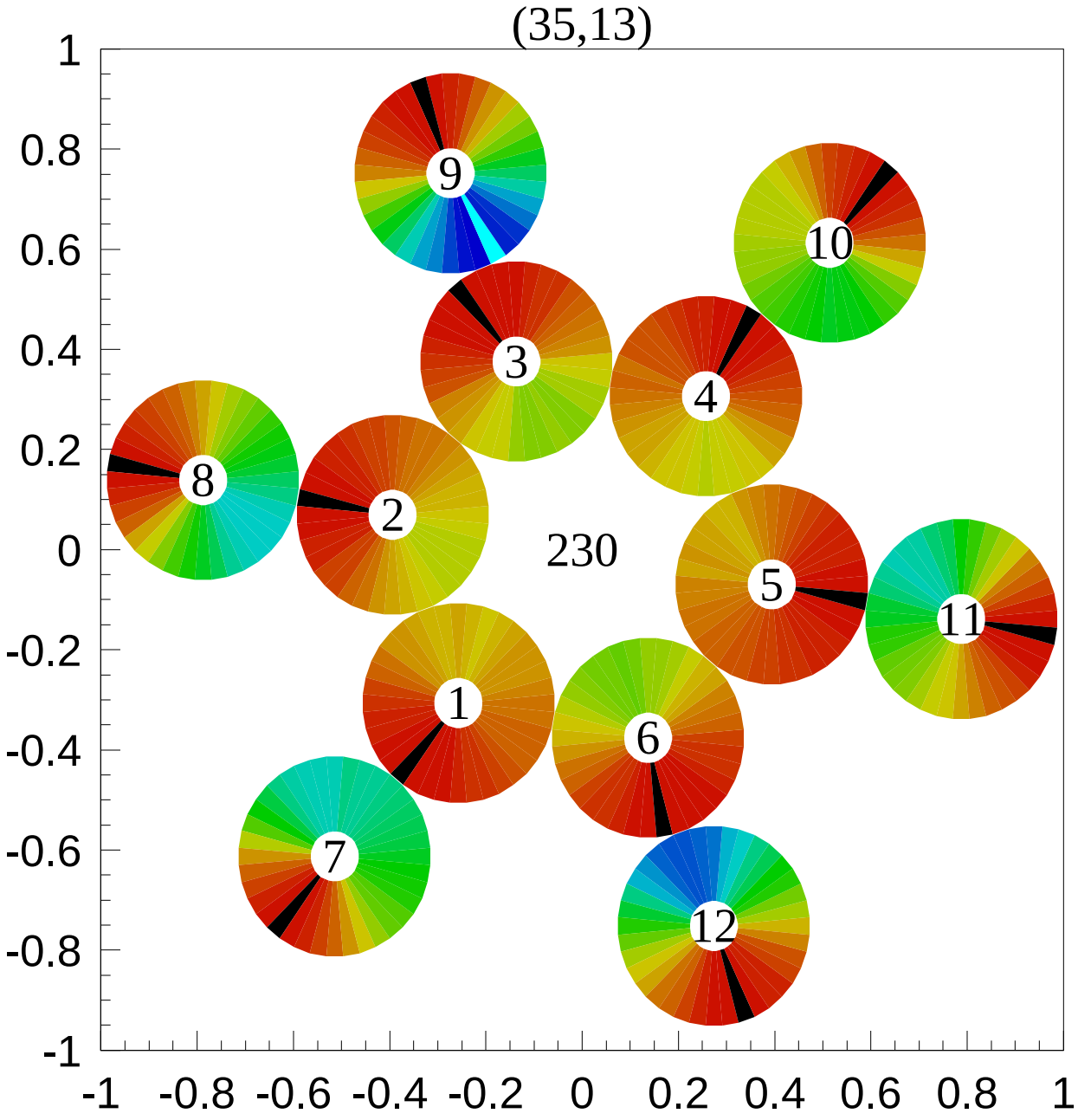

(34,57)
tilted LEDs
average of 6
average of 12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

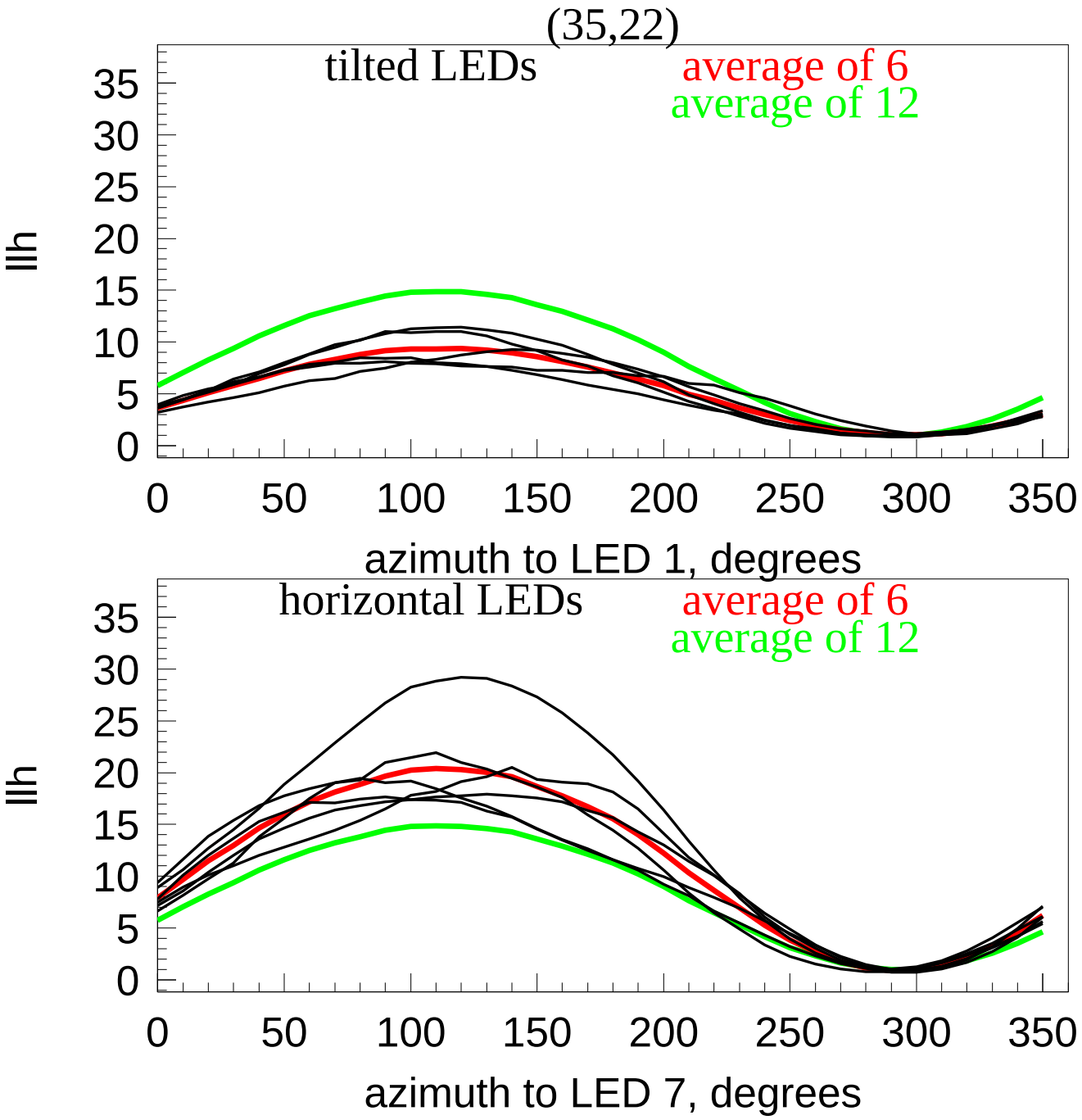

(34,57)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
7
6
1
11
5
50
2
8
4
3
10
9

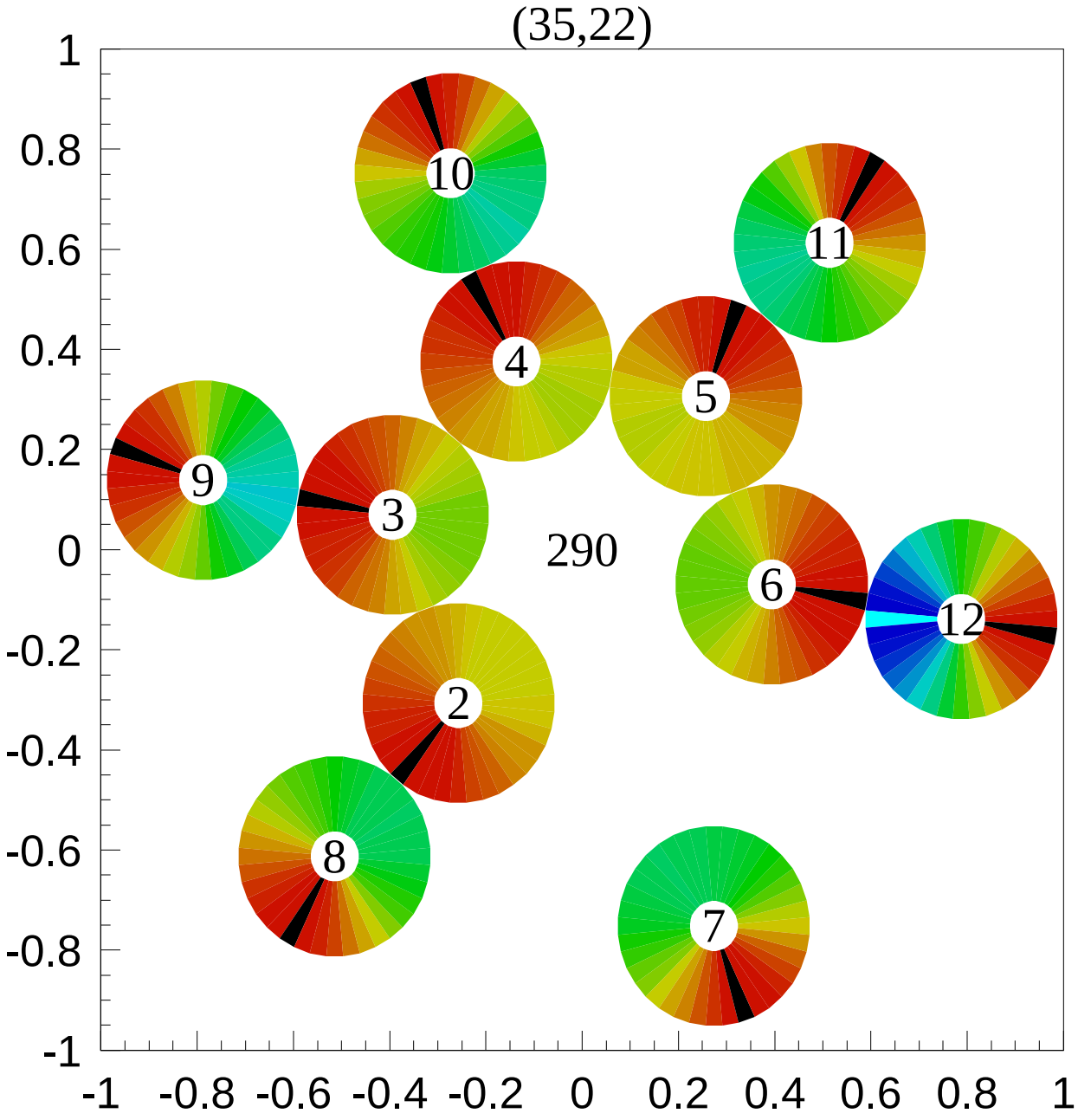

(35,1)
tilted LEDs
average of 6
average of 12
llh
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

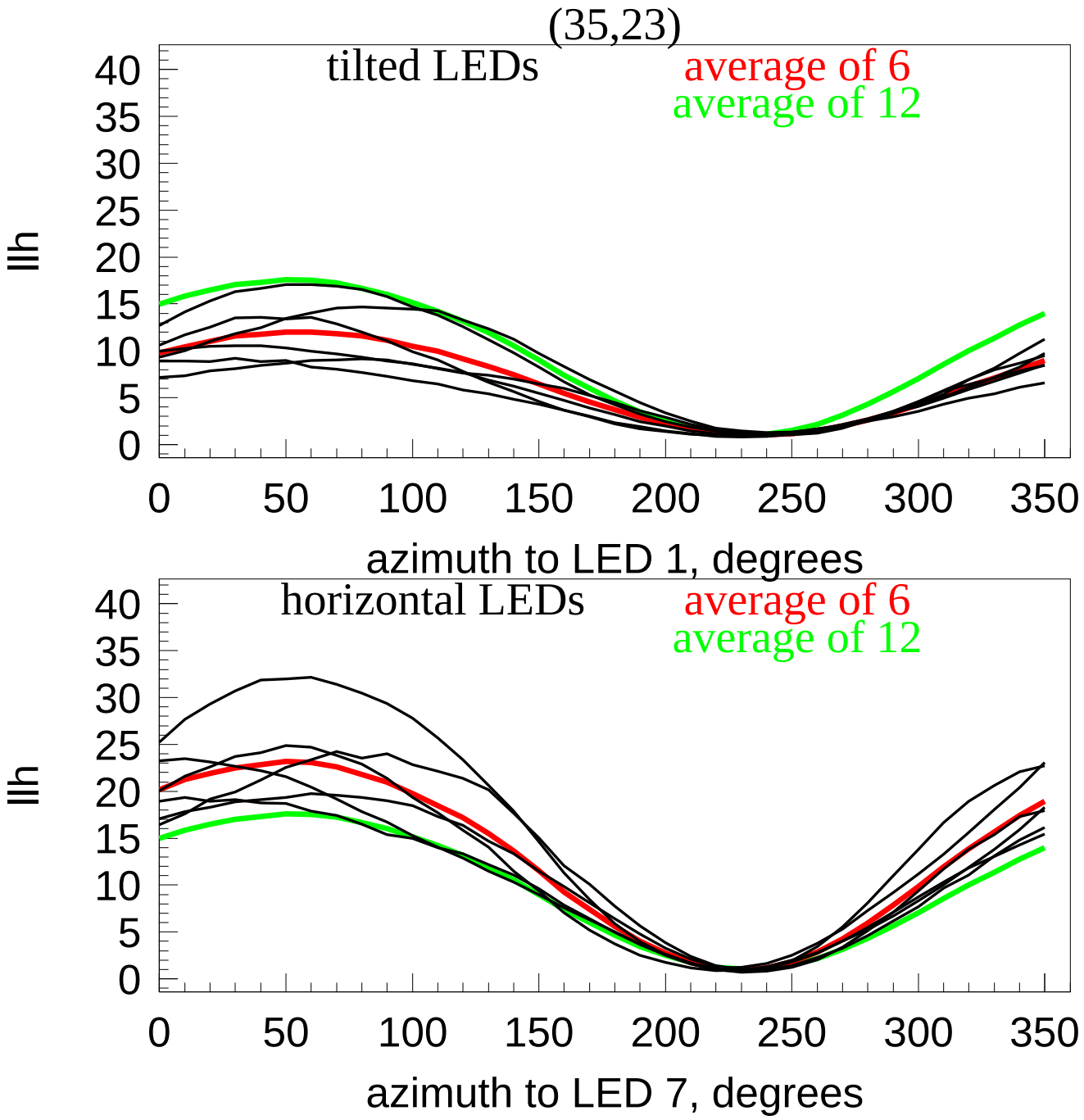

(35,1)
7
8
2
12
6
120
5
4
11
10
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

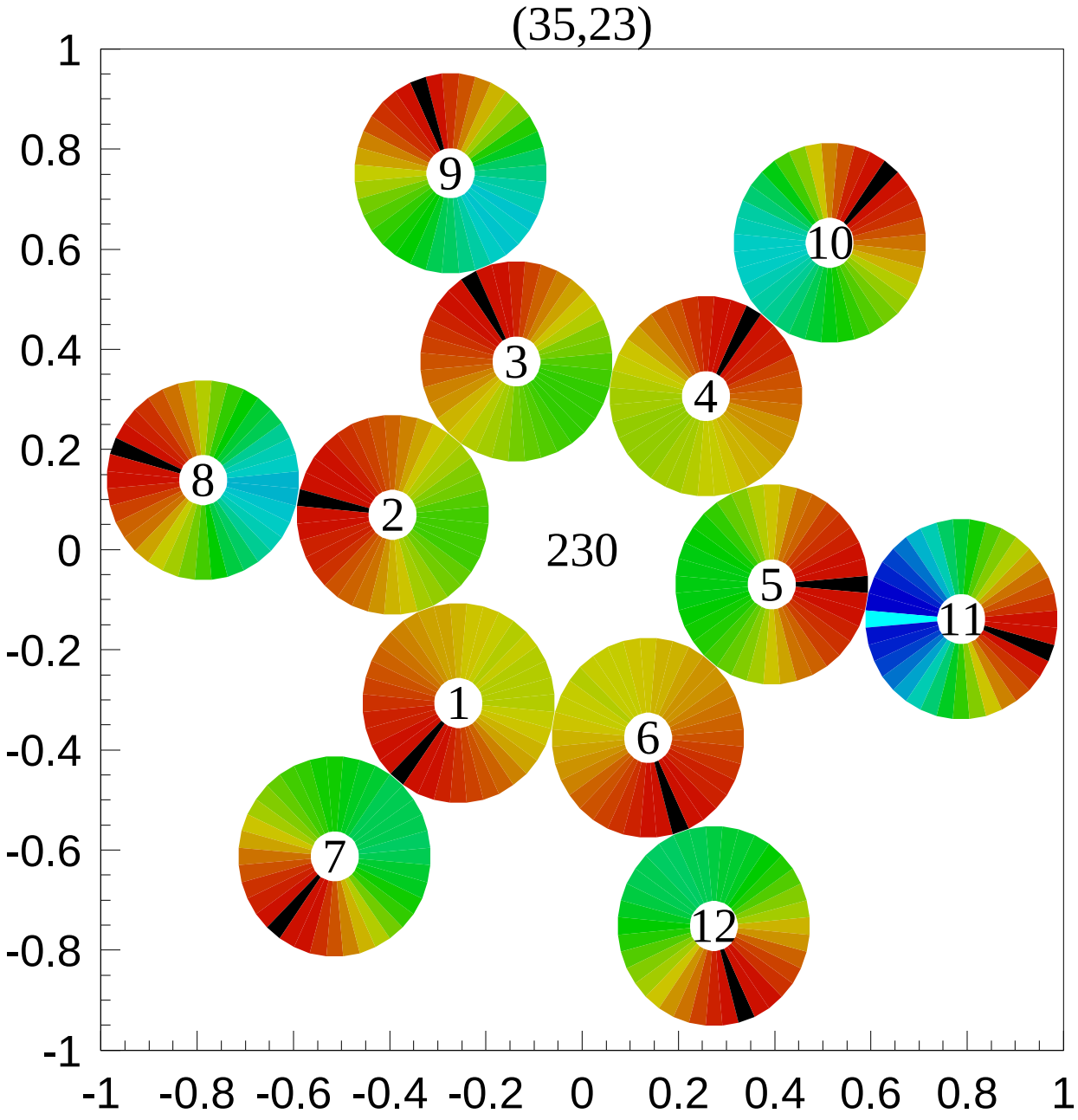

(35,13)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

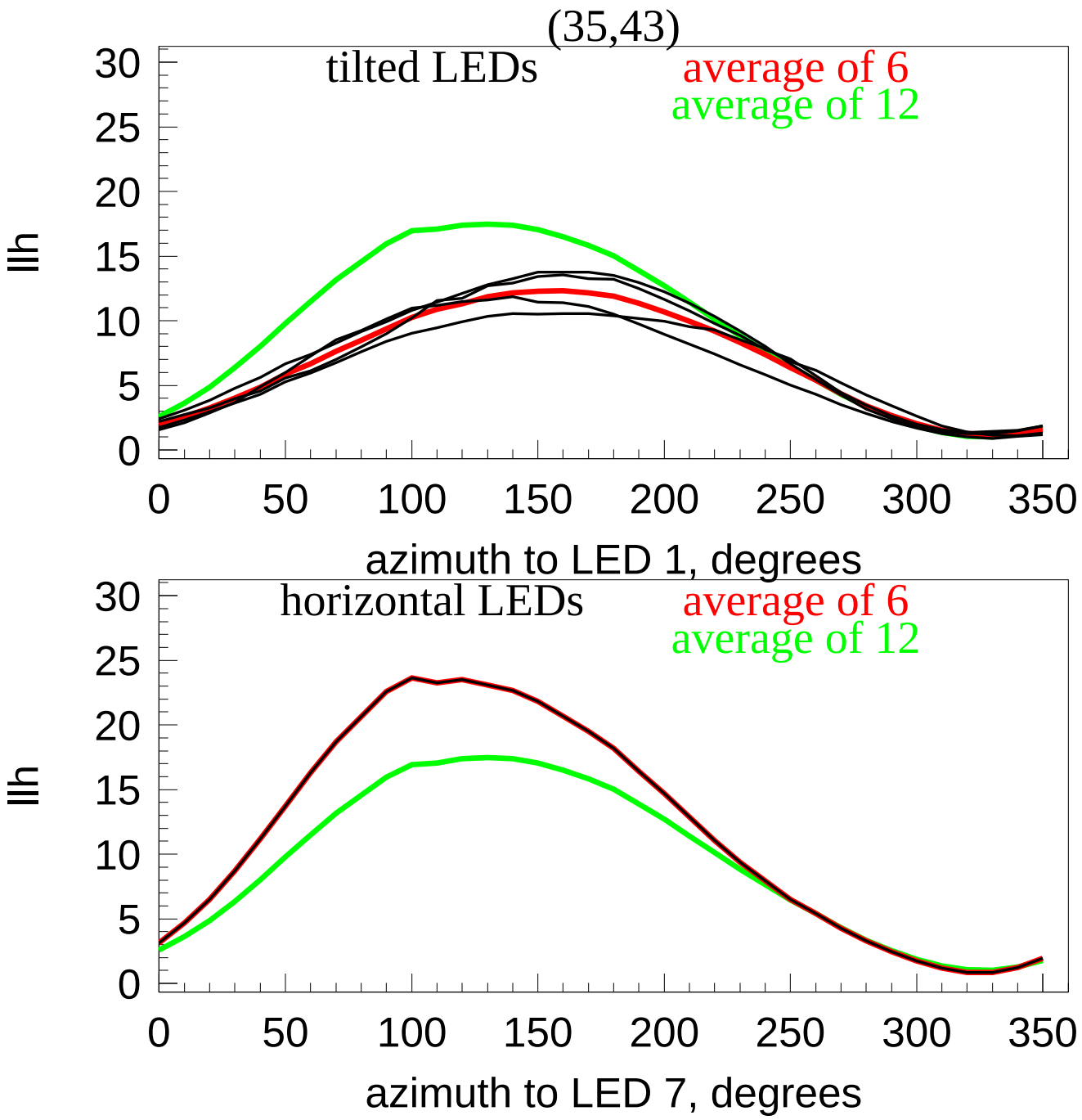

(35,13)
230
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

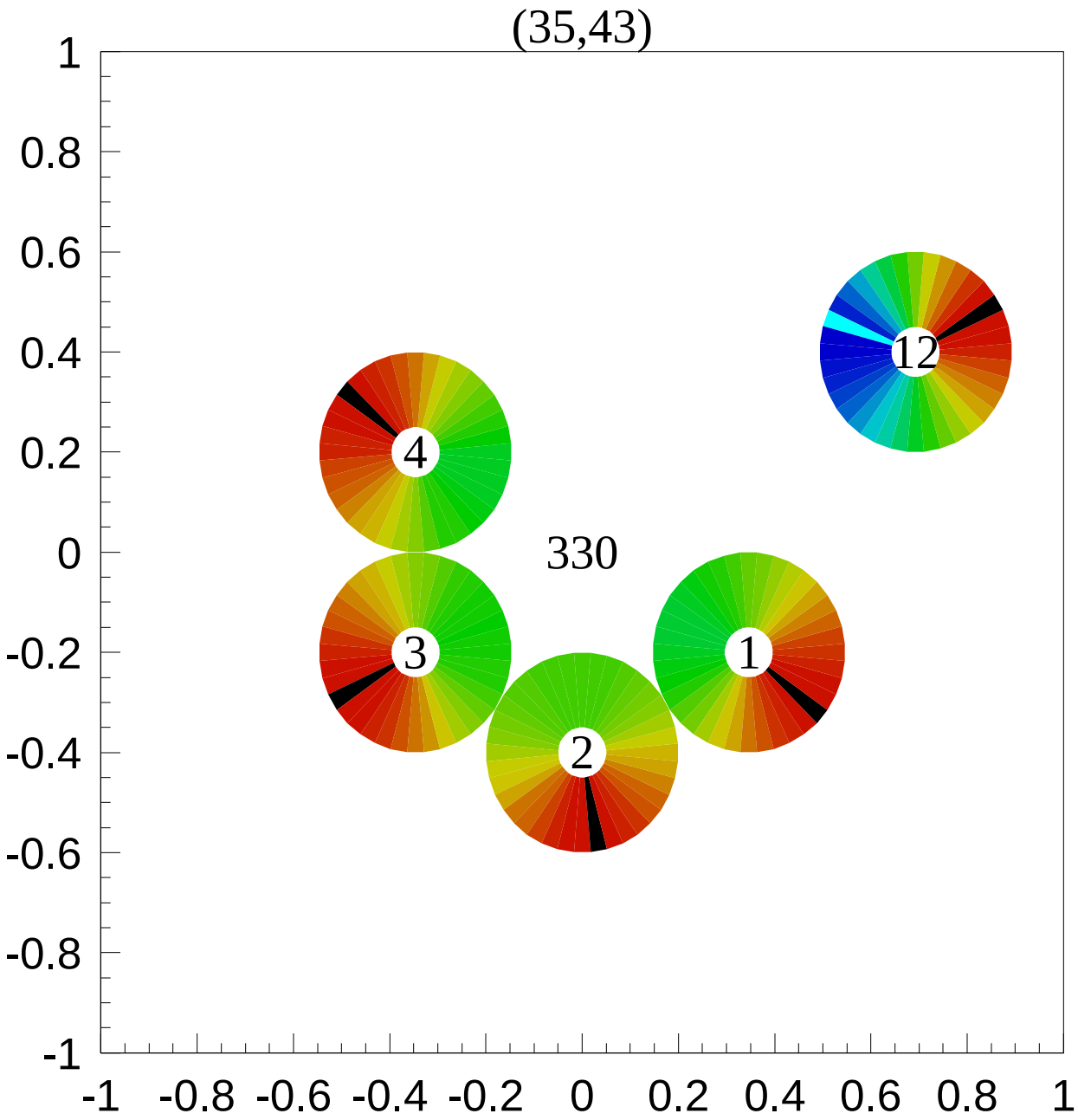

(35,22)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

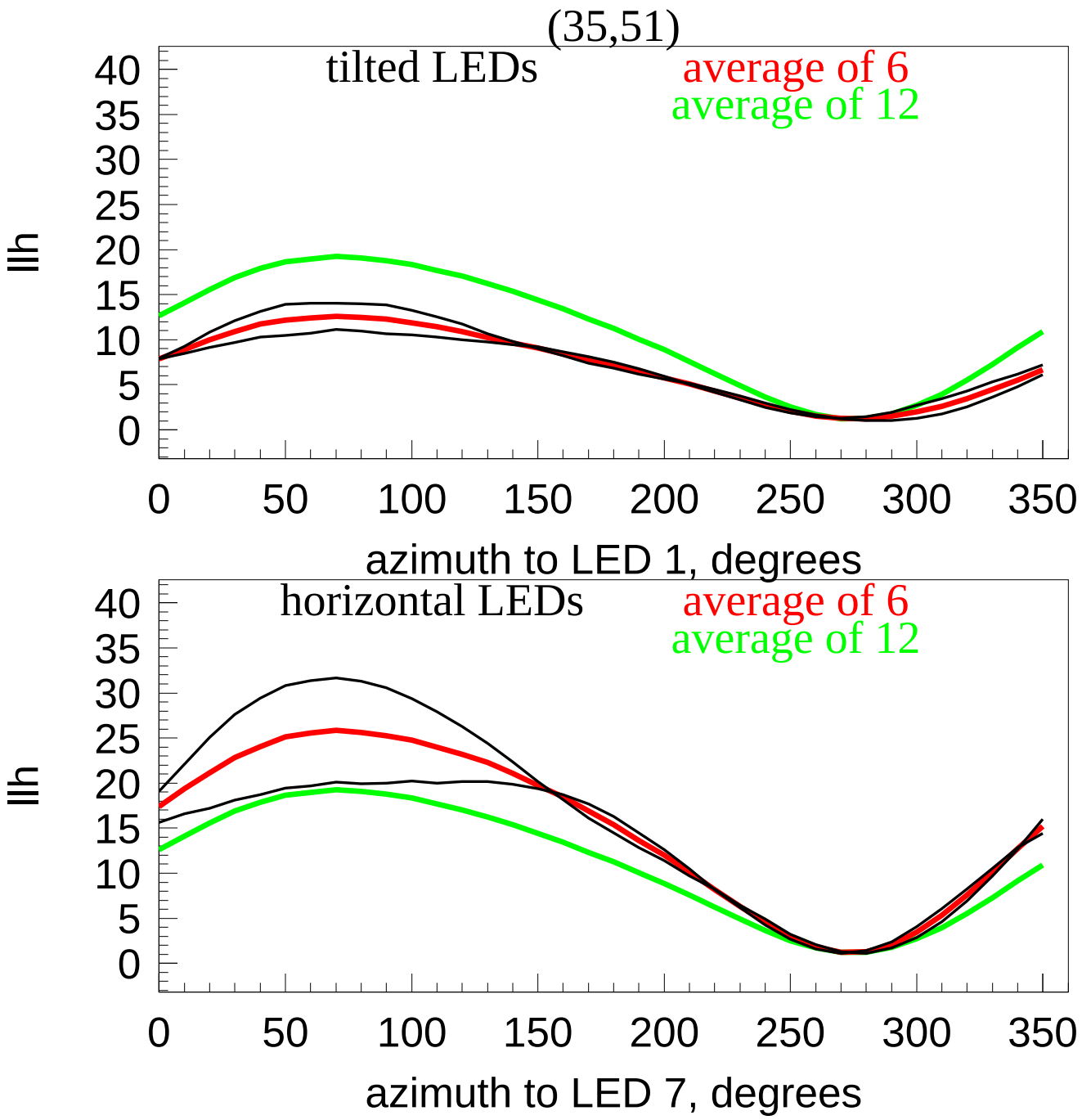

(35,22)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
11
4
5
9
3
290
6
12
2
8
7

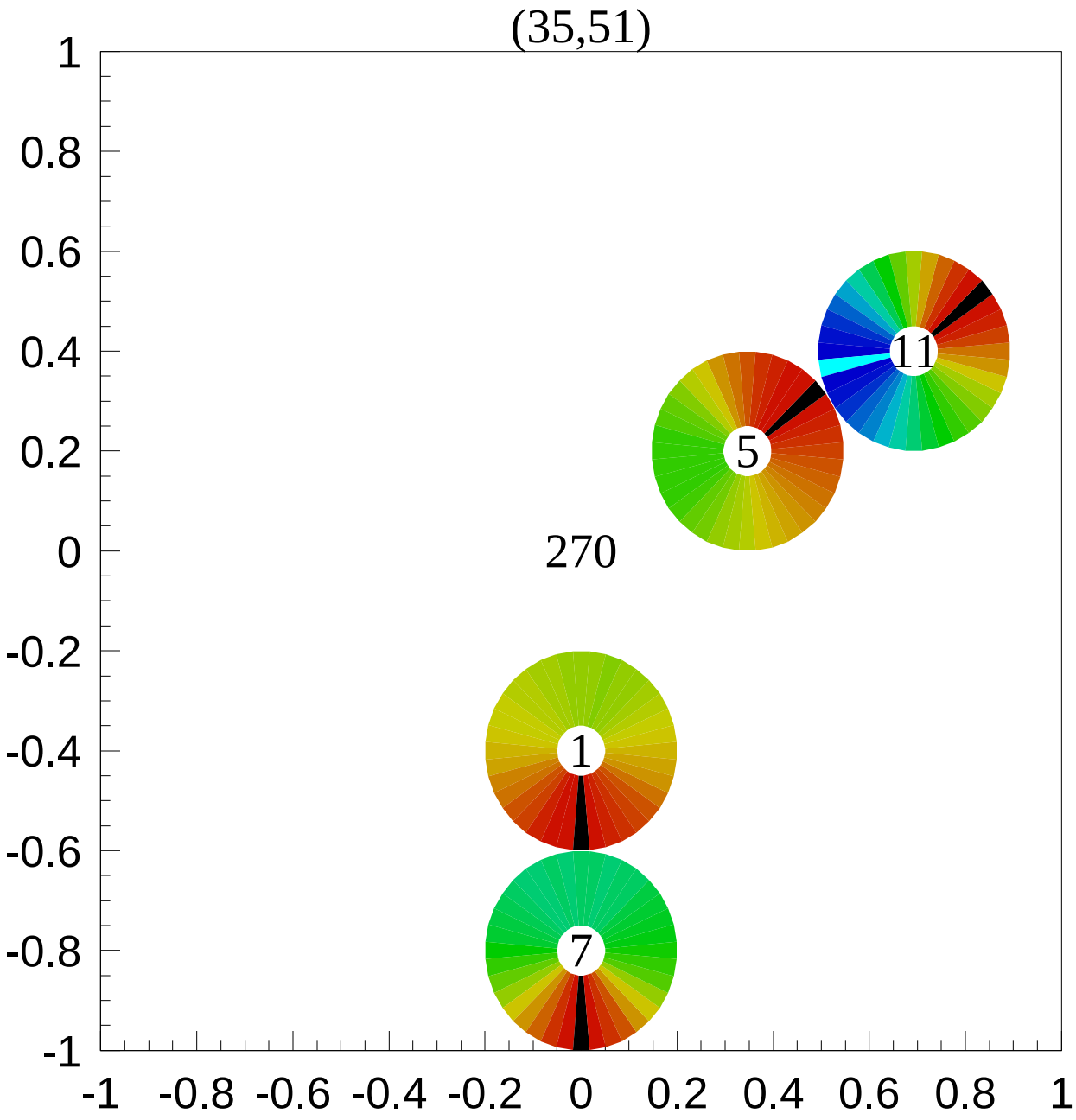

(35,23)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

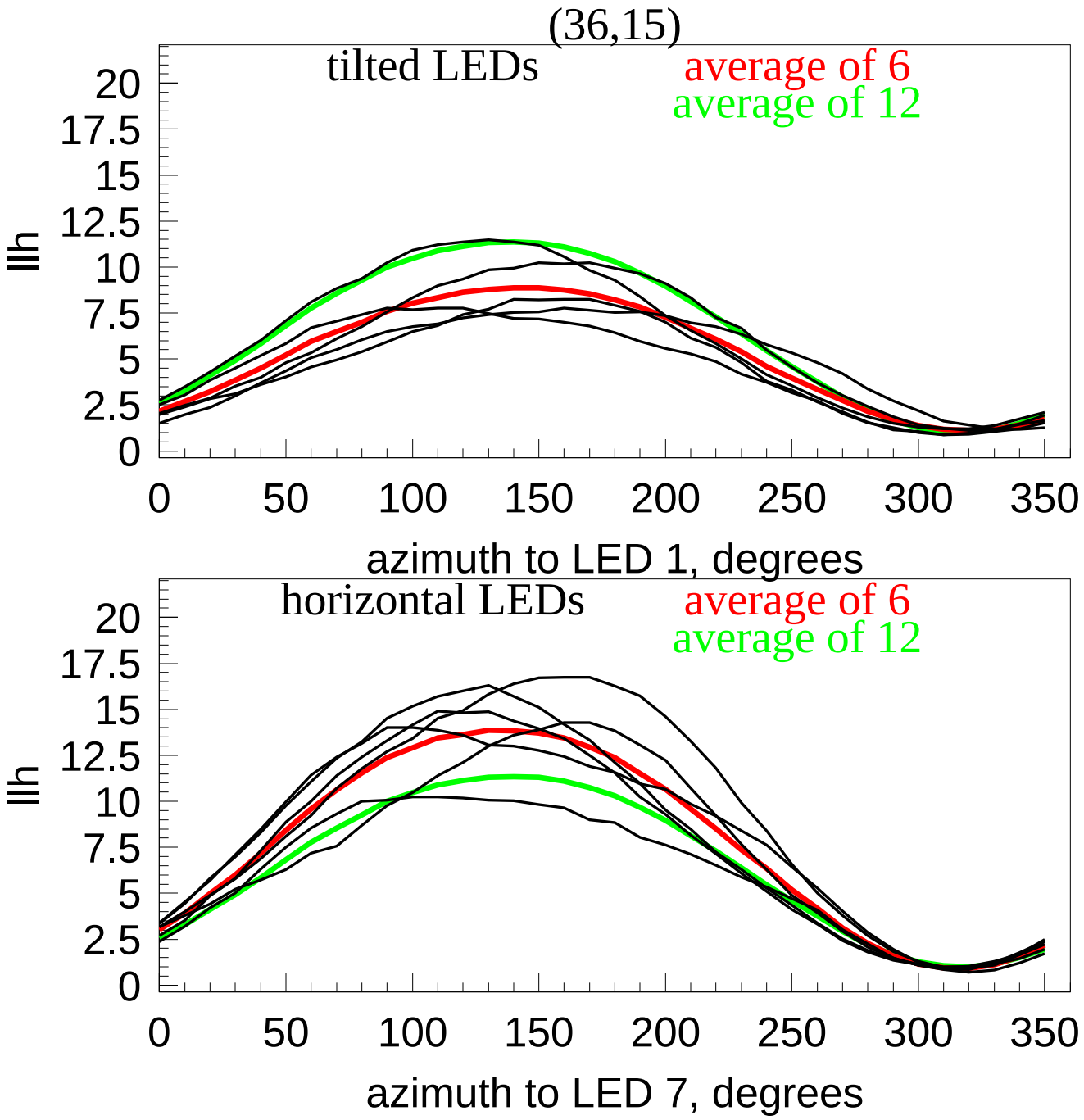

(35,23)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
10
3
4
8
2
230
5
11
1
6
7
12

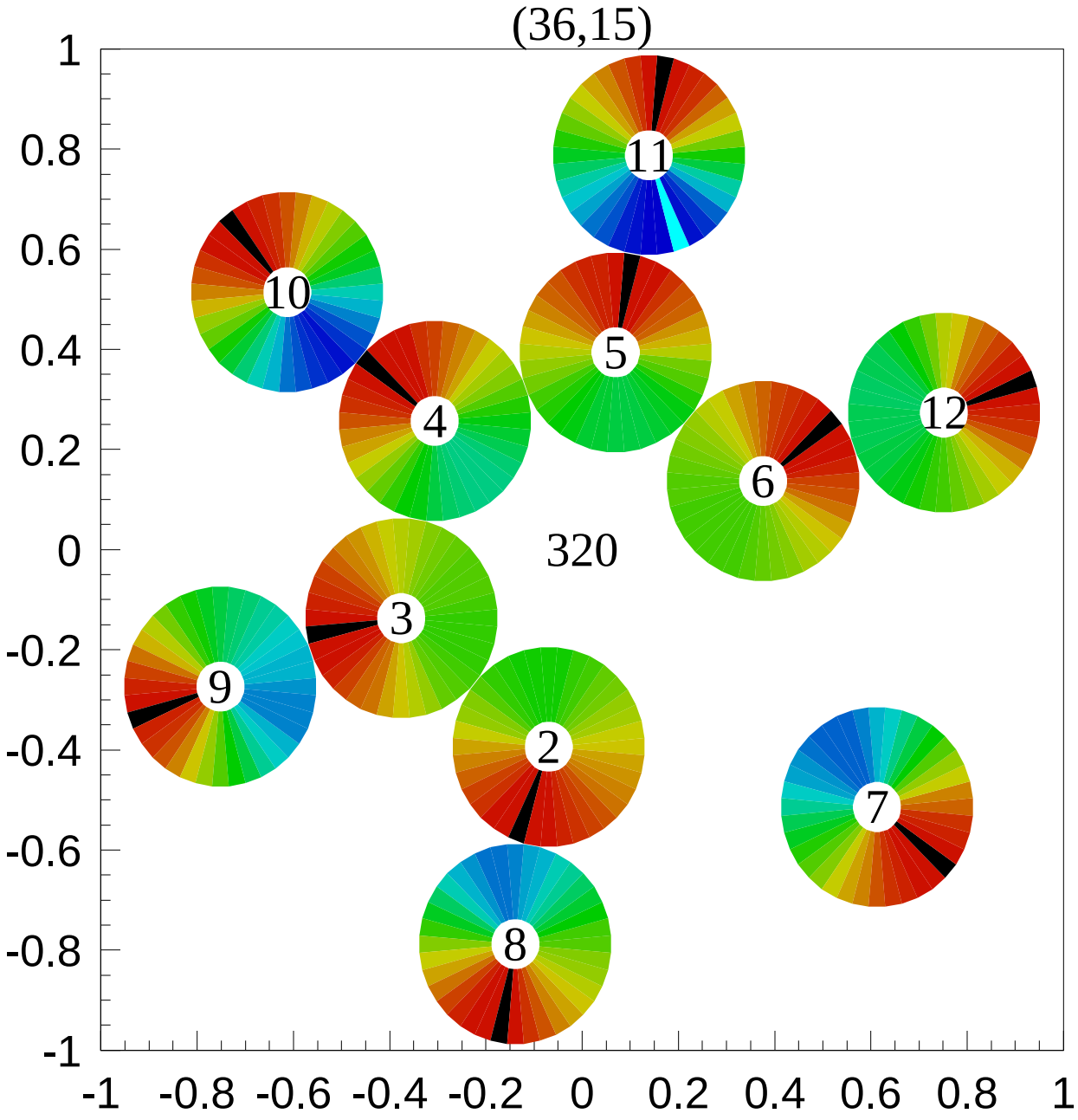

(35,43)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

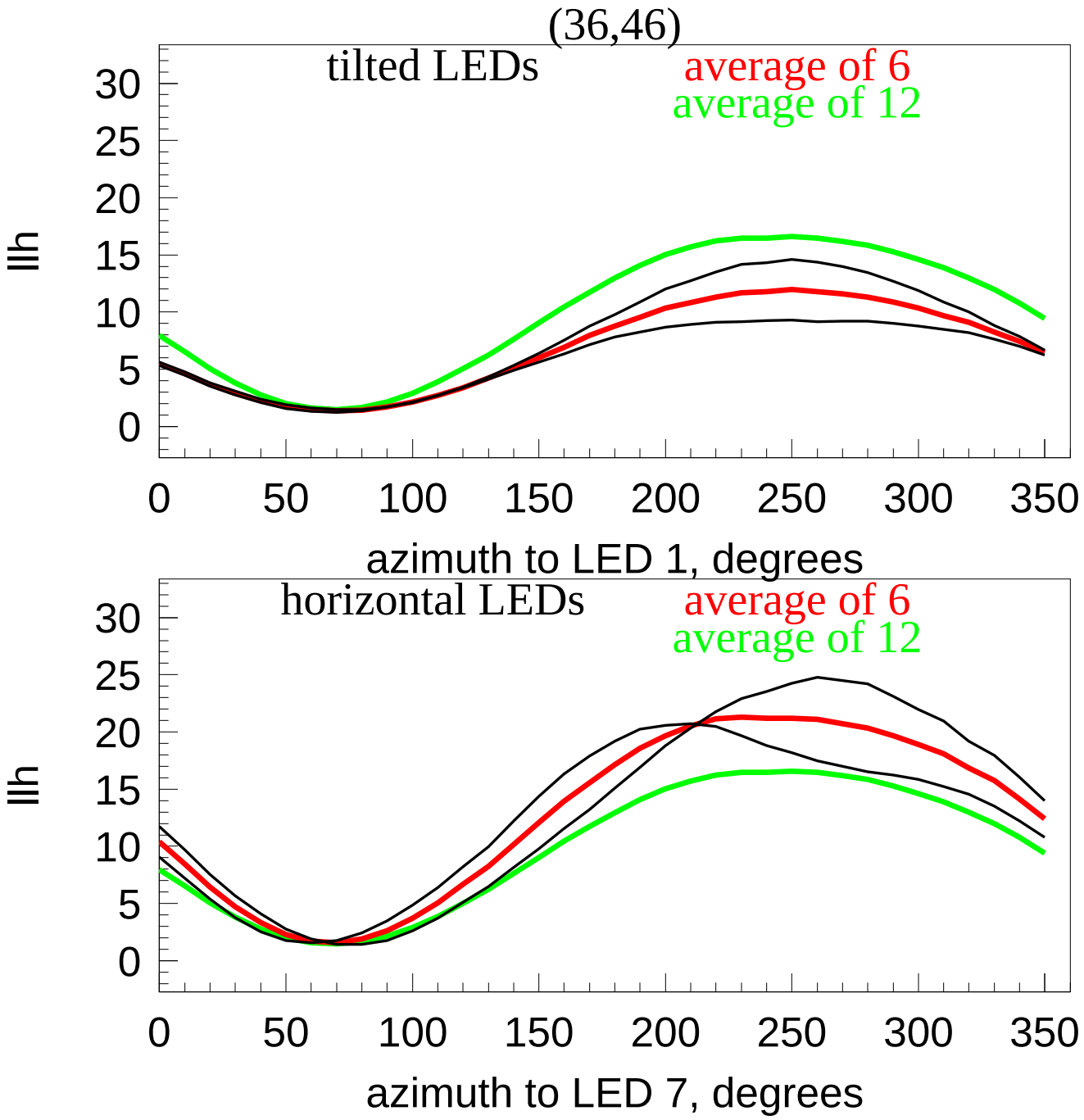

(35,43)
330
12
4
3
1
2
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

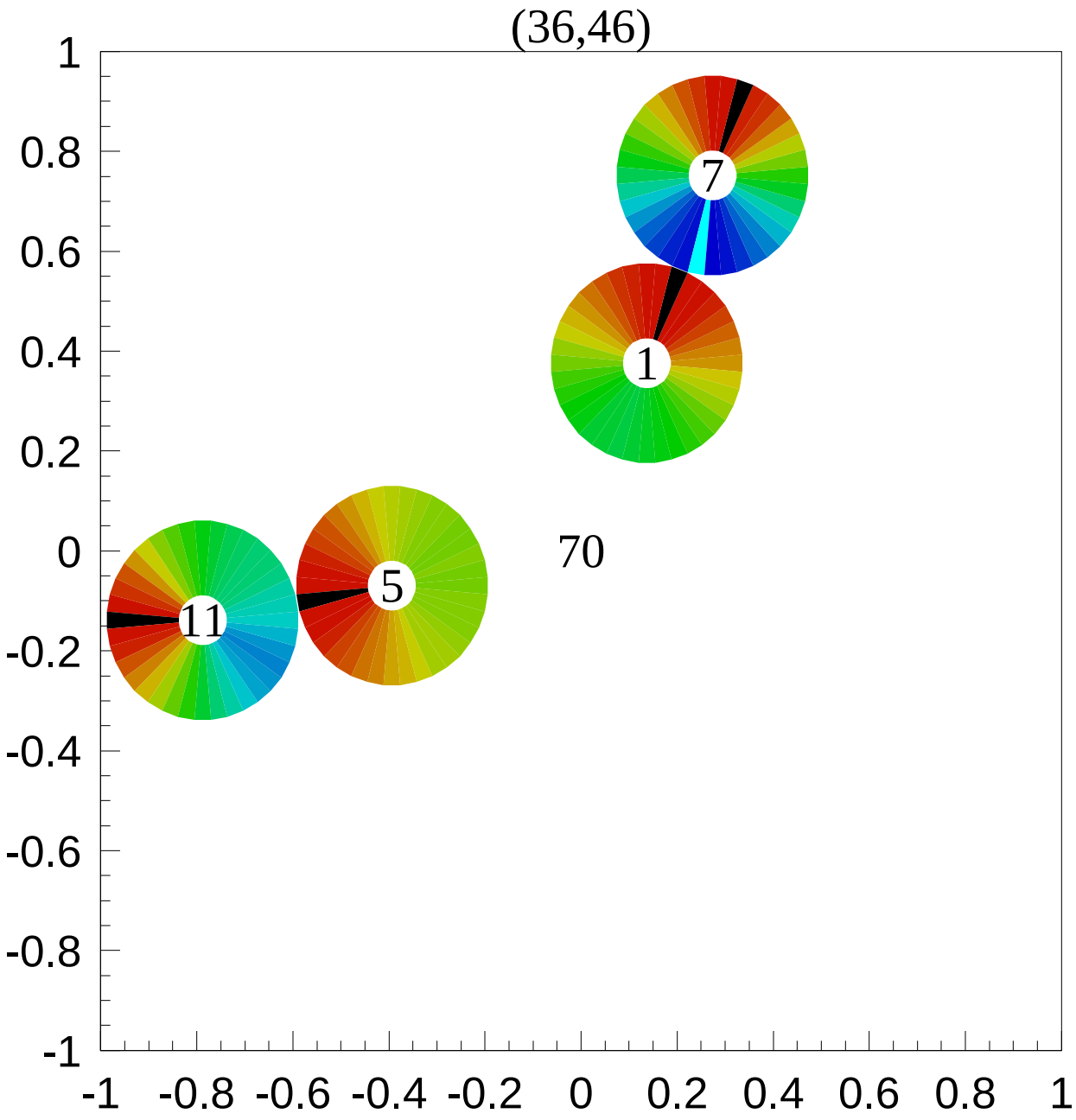

(35,51)
tilted LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

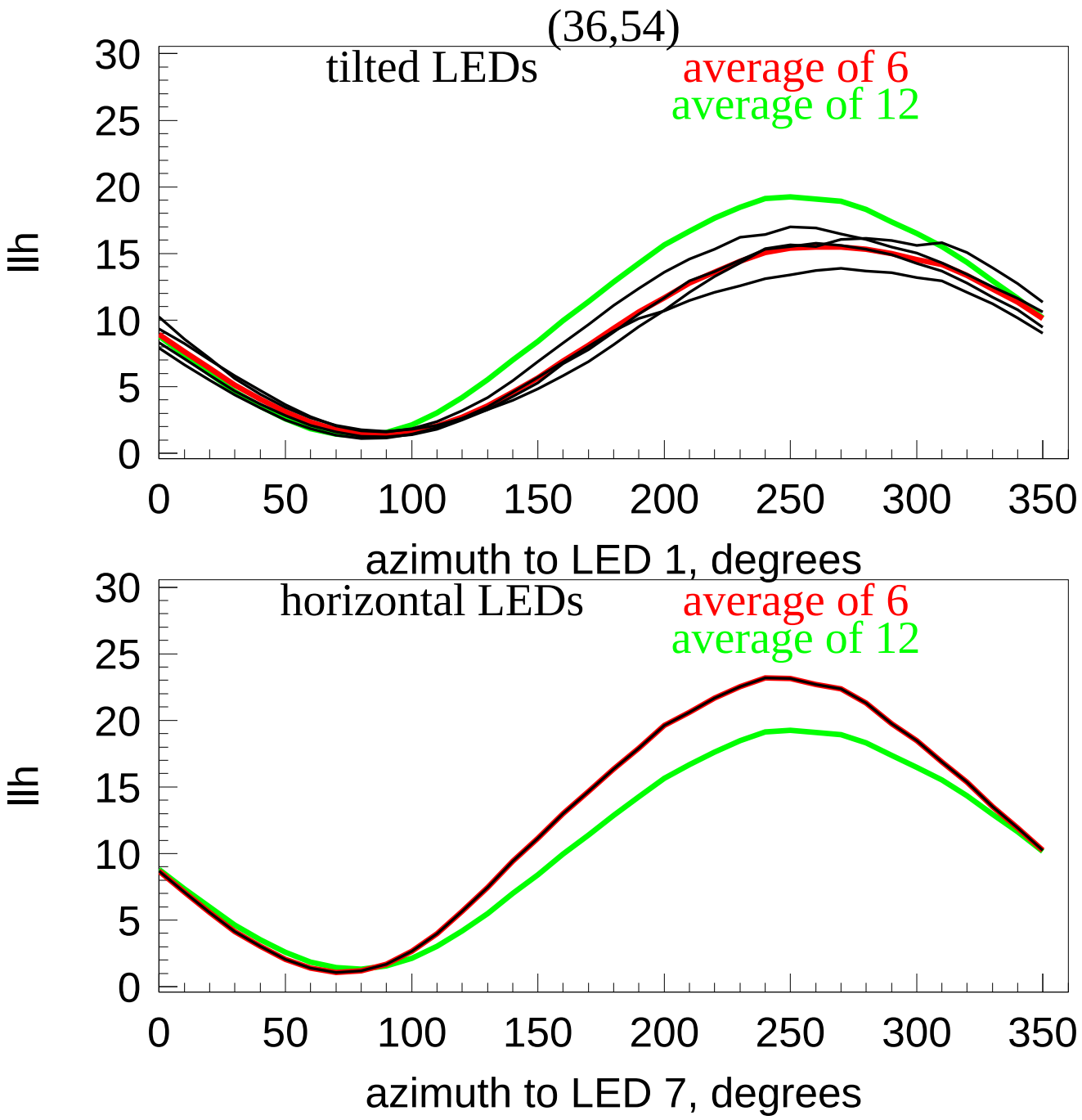

(35,51)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
270
1
7

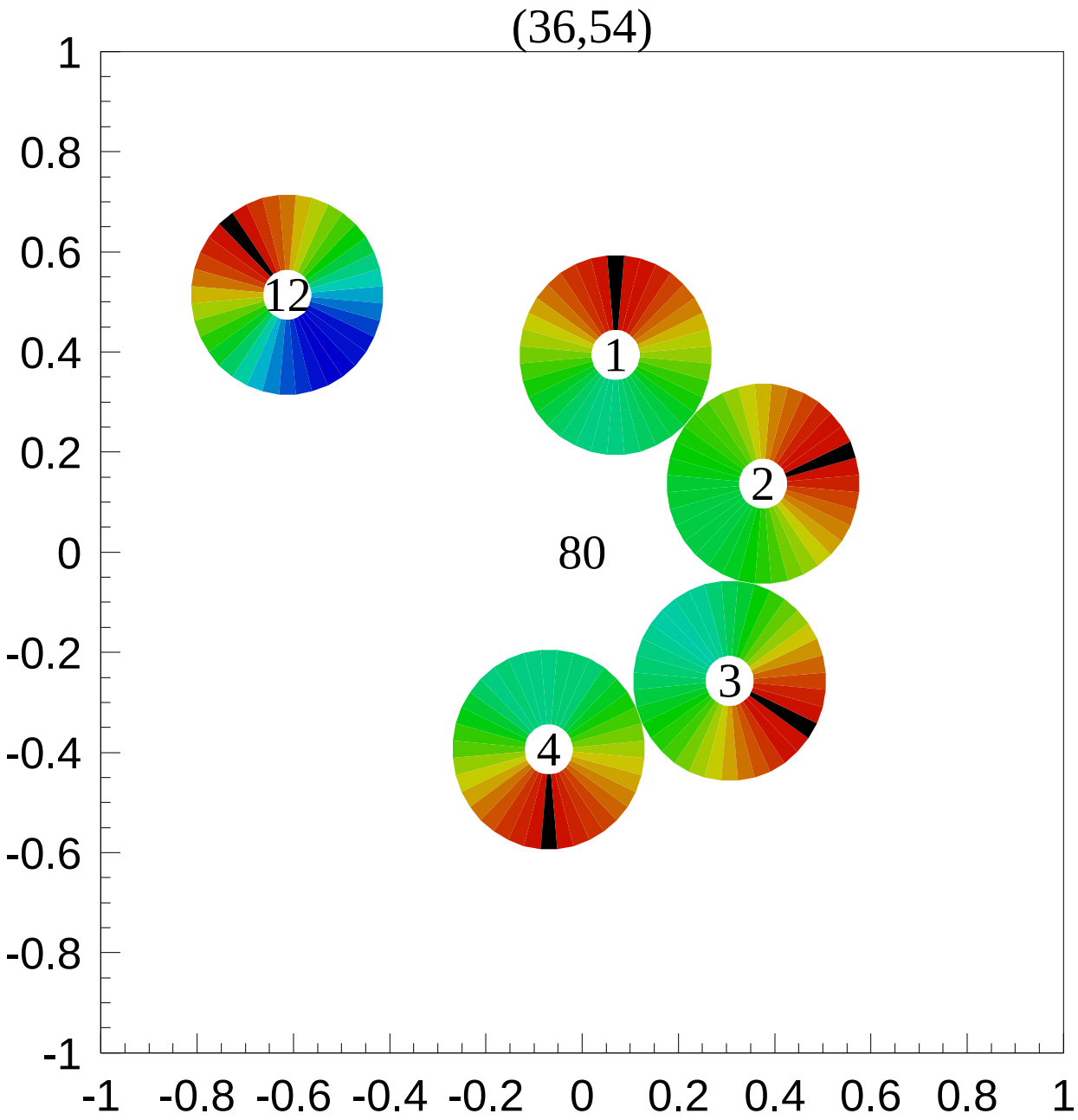

(36,15)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

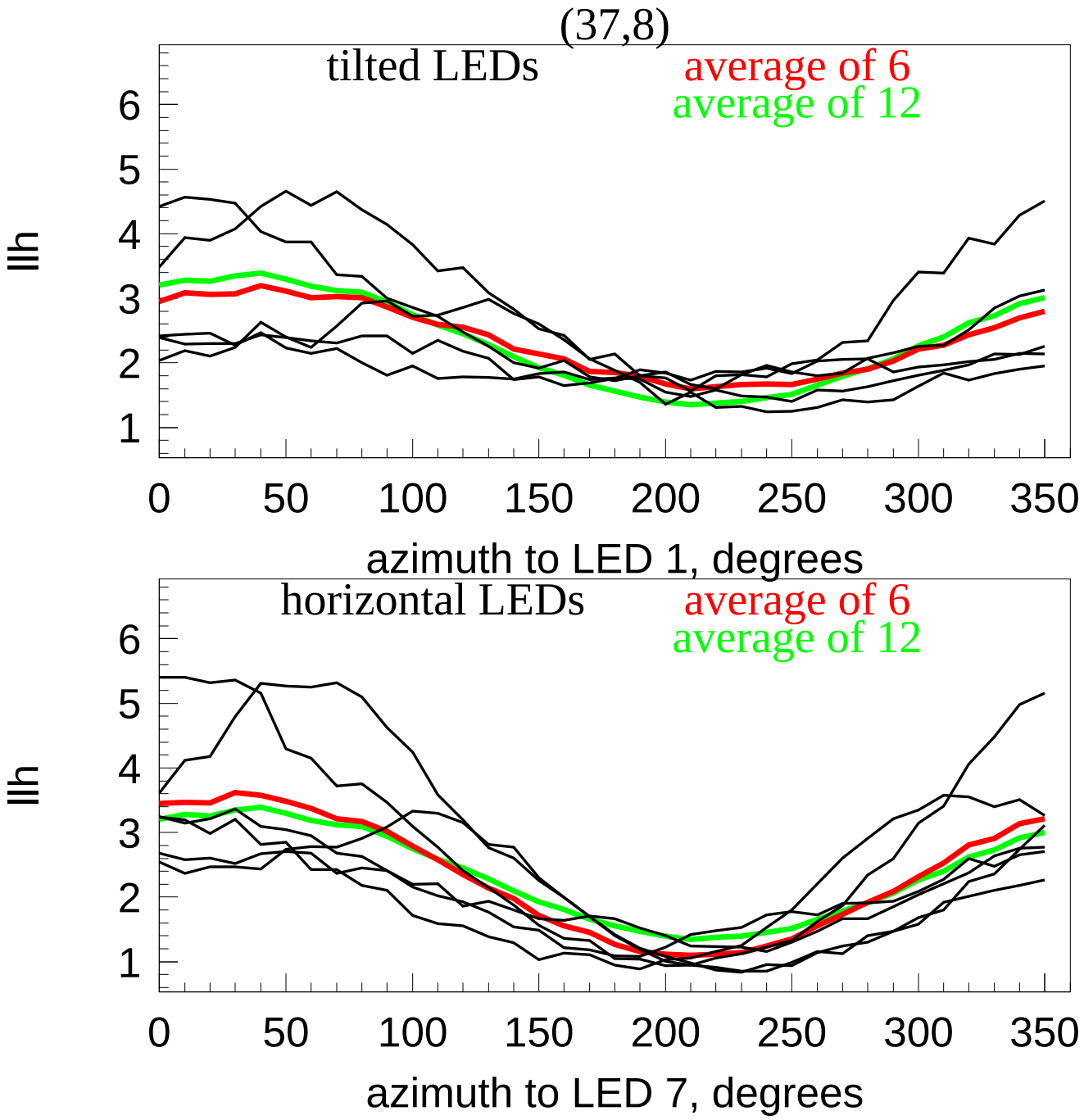

(36,15)
320
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

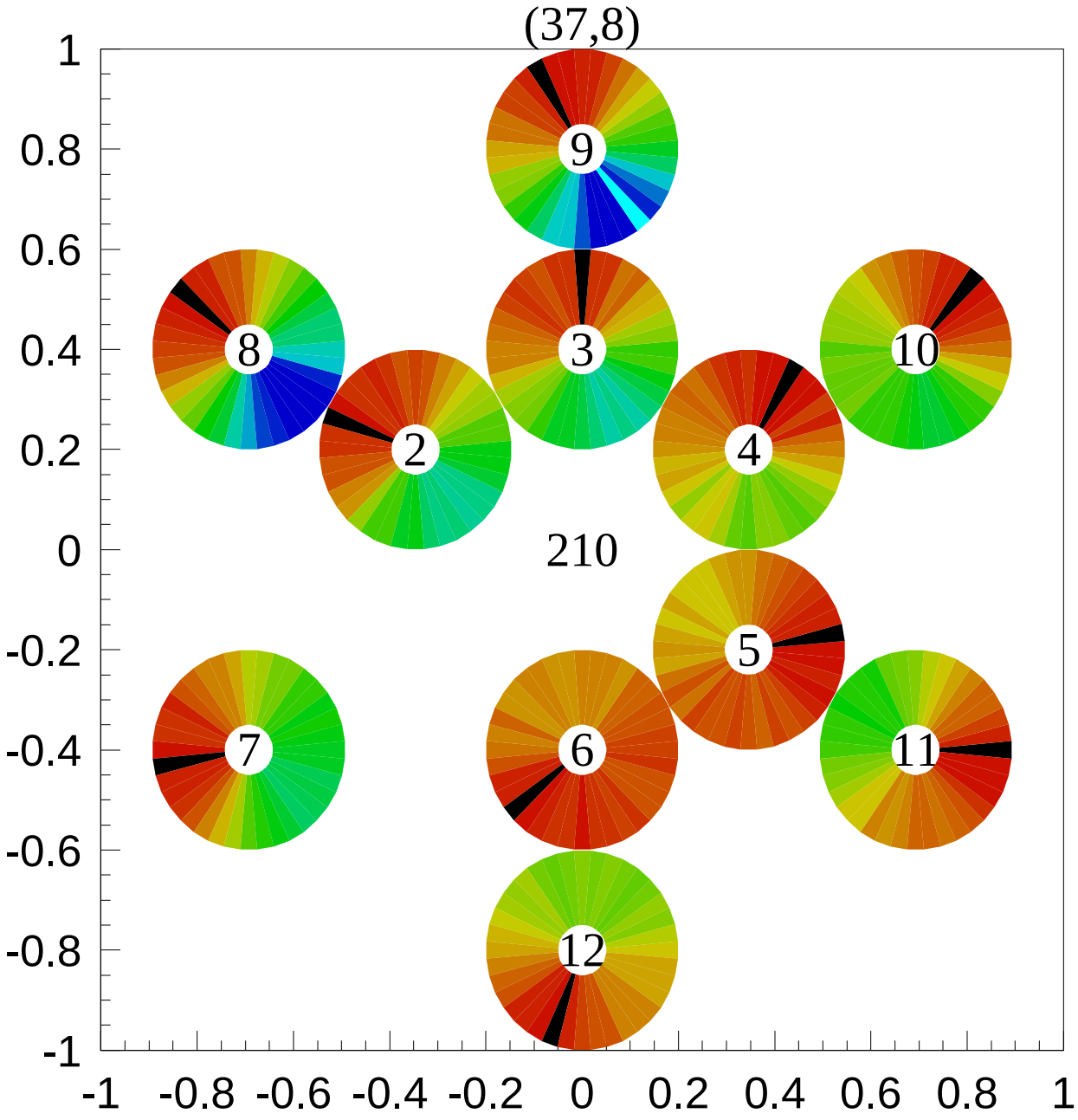

(36,46)
tilted LEDs
average of 6
average of 12
Ilh
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

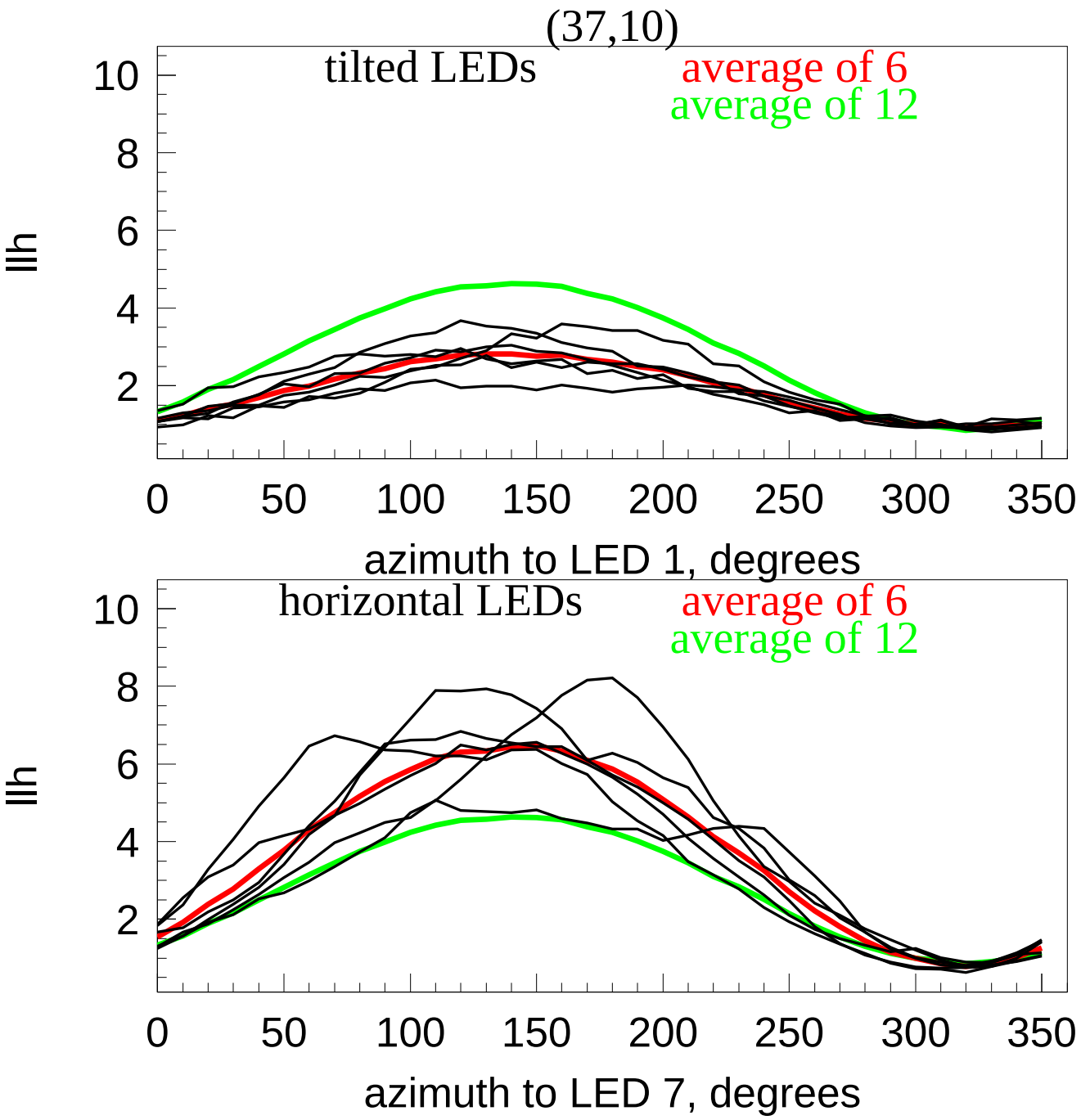

(36,46)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
5
11
70

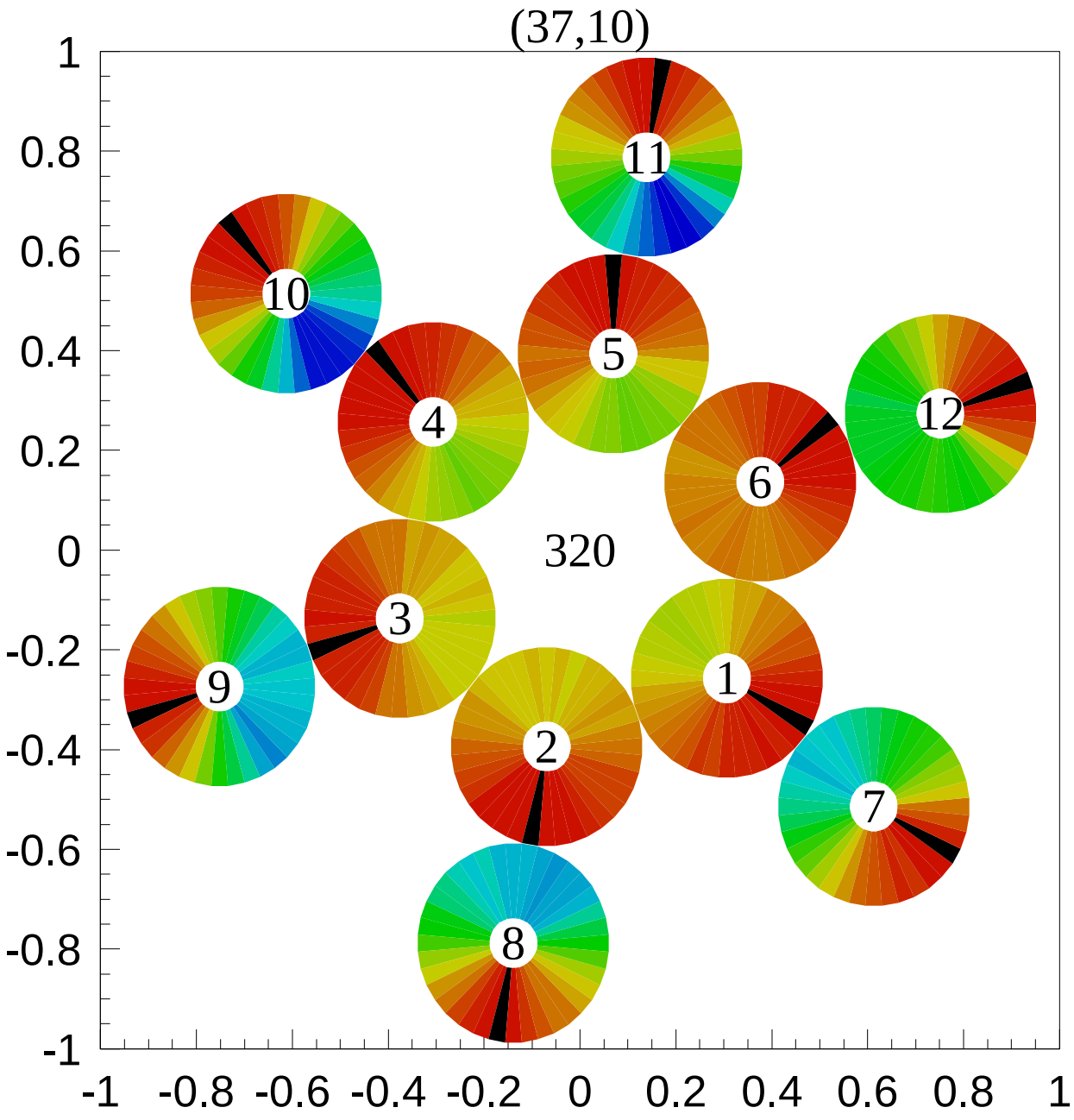

(36,54)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

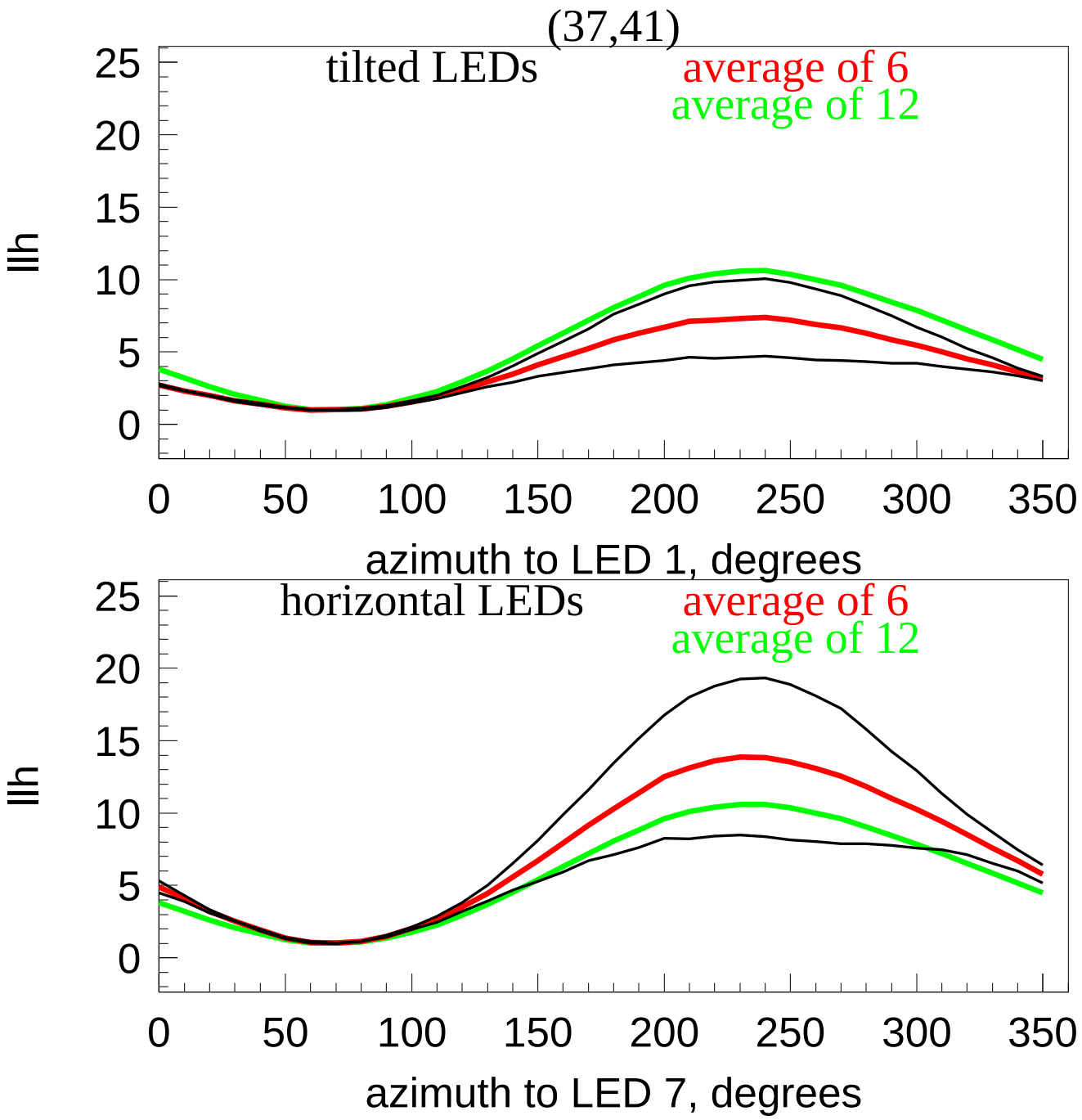

(36,54)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
1
2
80
3
4

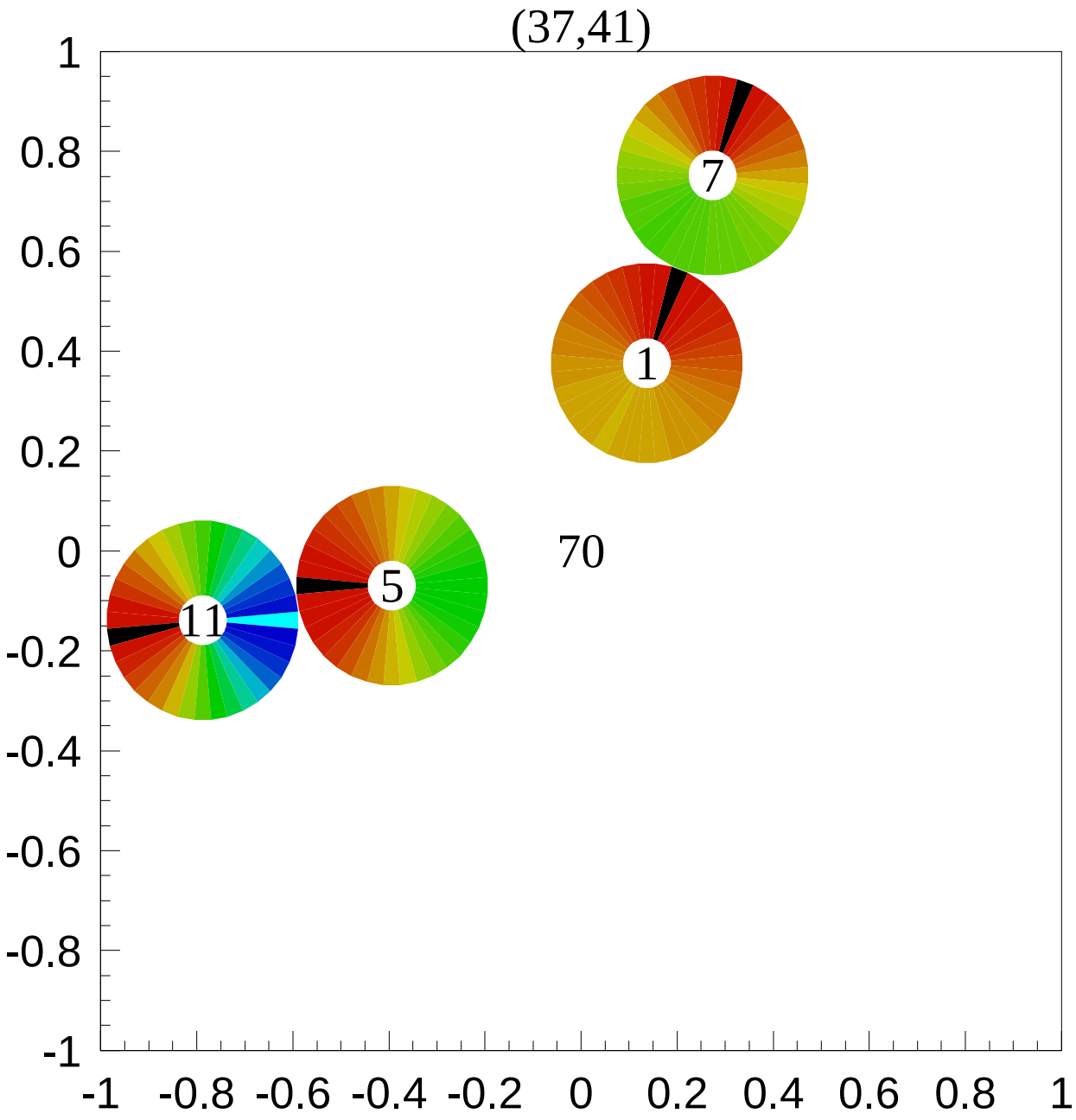

(37,8)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

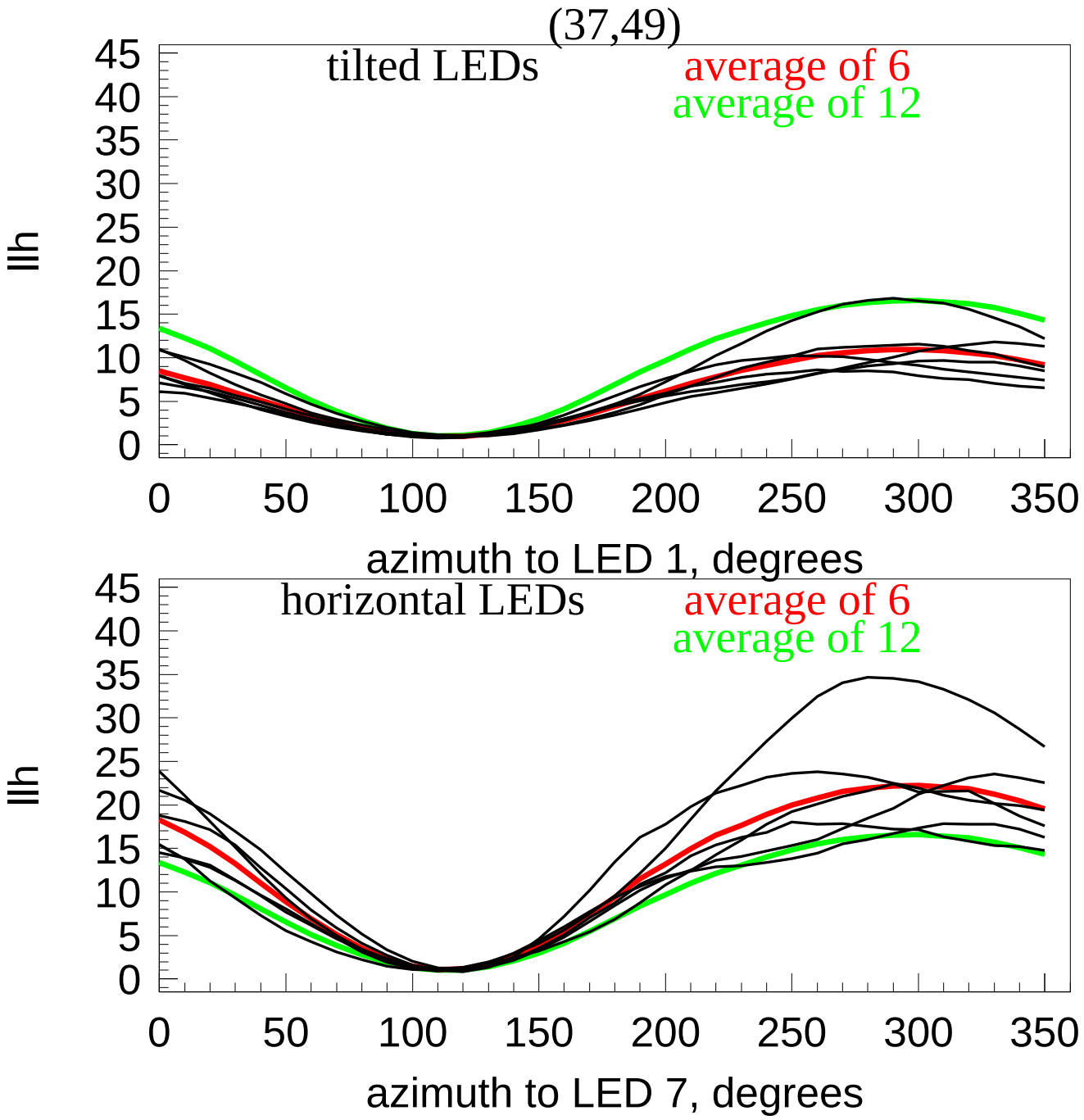

(37,8)
9
8
3
10
2
4
210
5
7
6
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

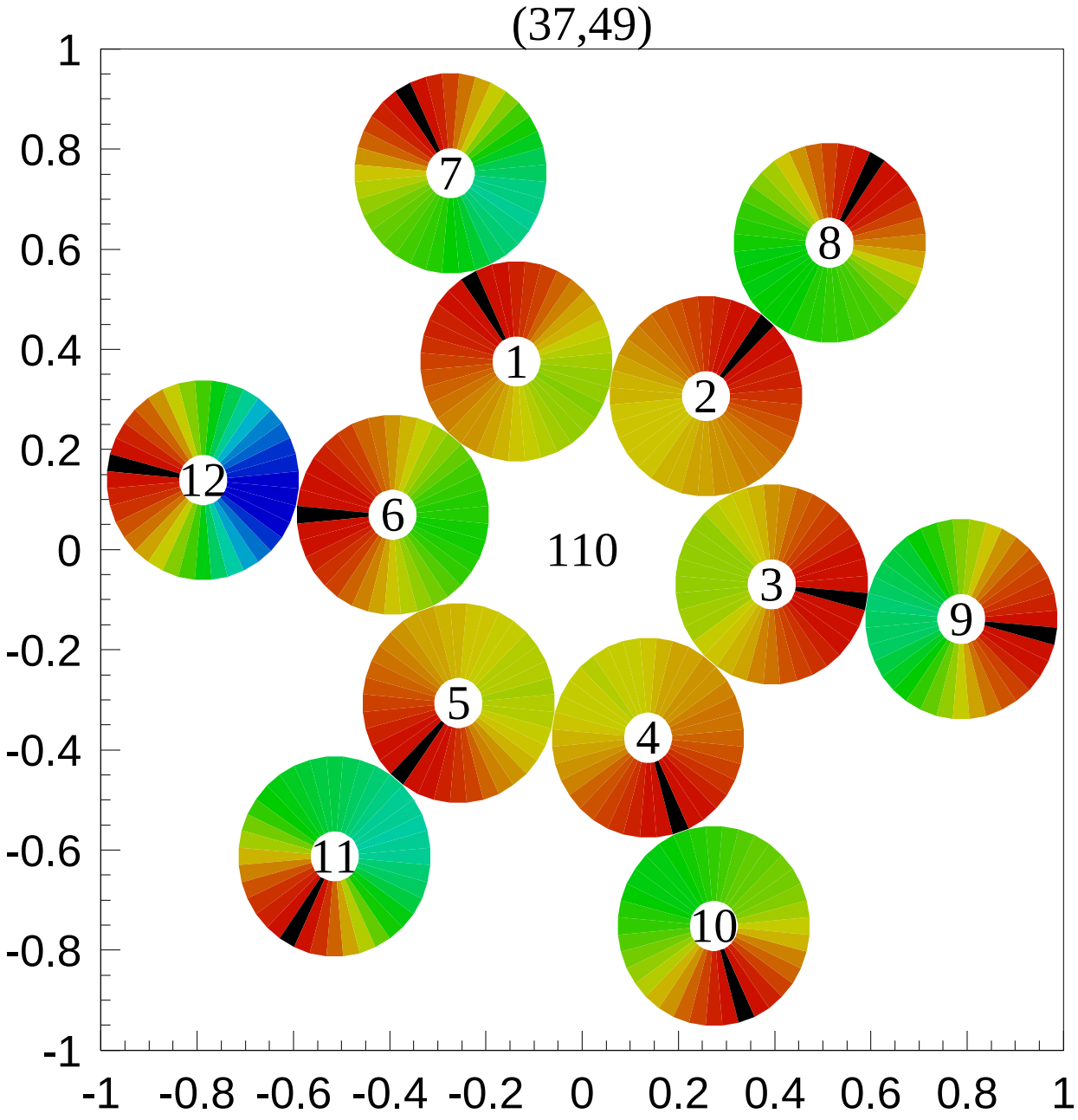

(37,10)
tilted LEDs
average of 6
average of 12
llh
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

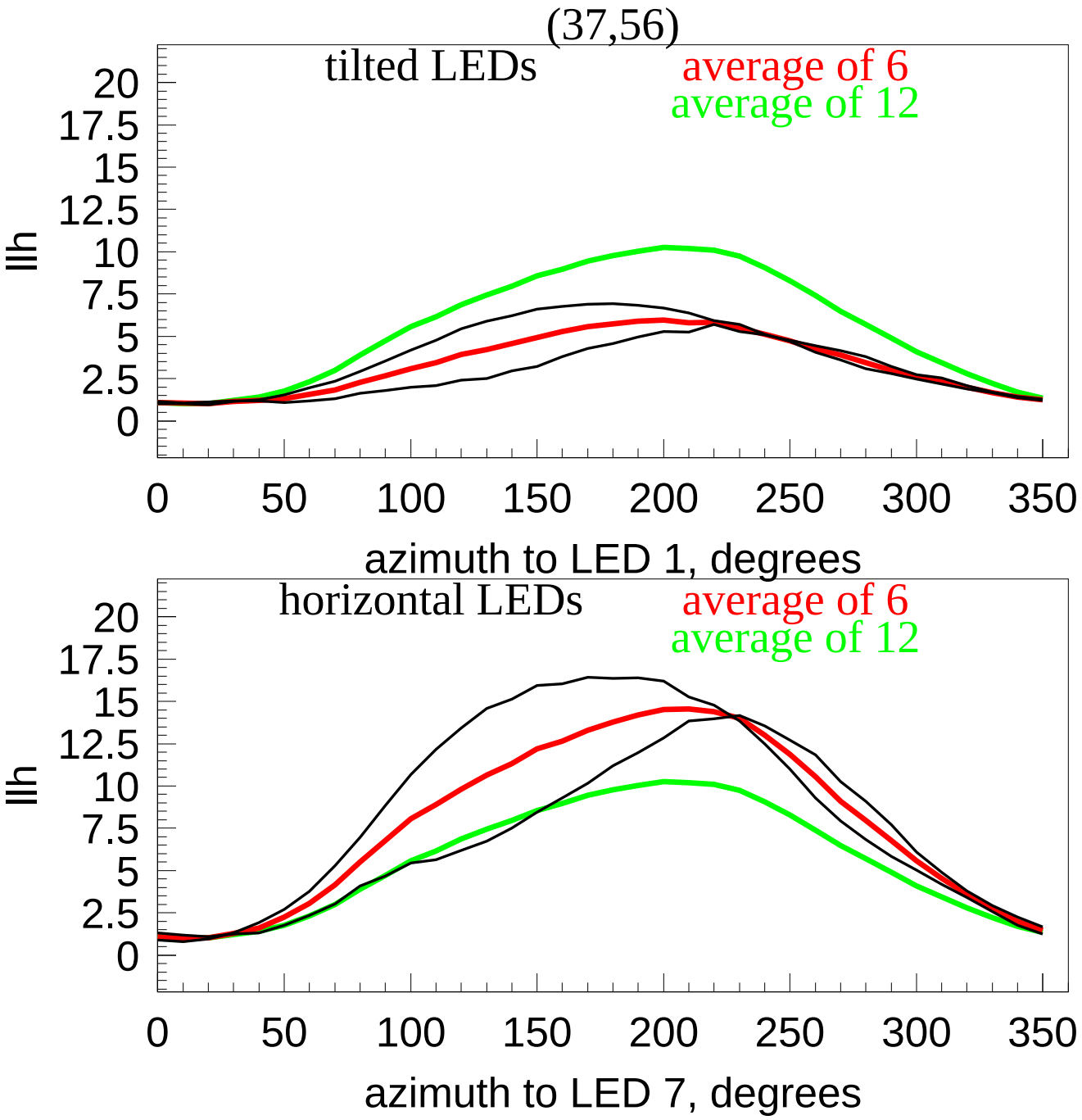

(37,10)
320
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

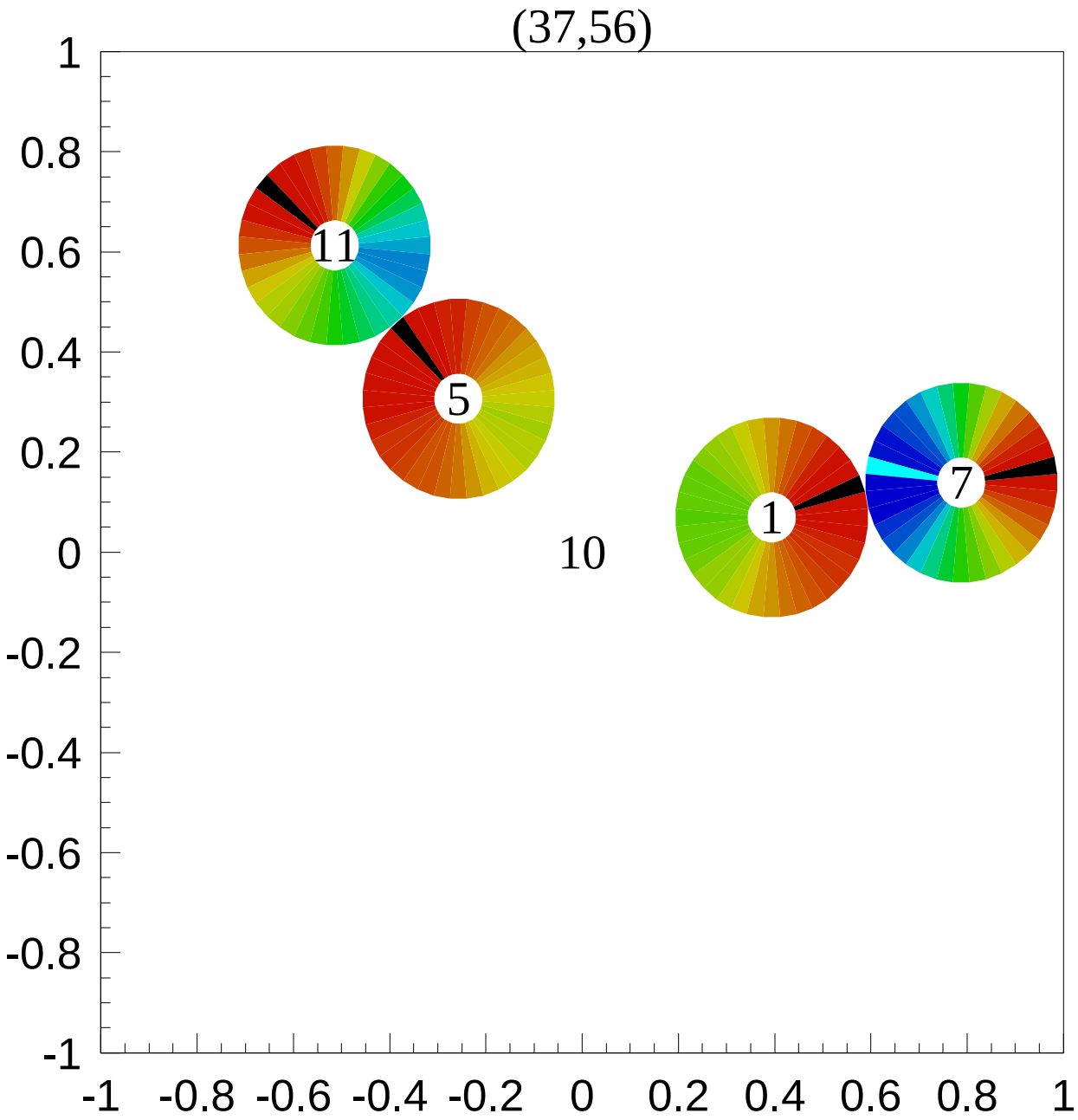

(37,41)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

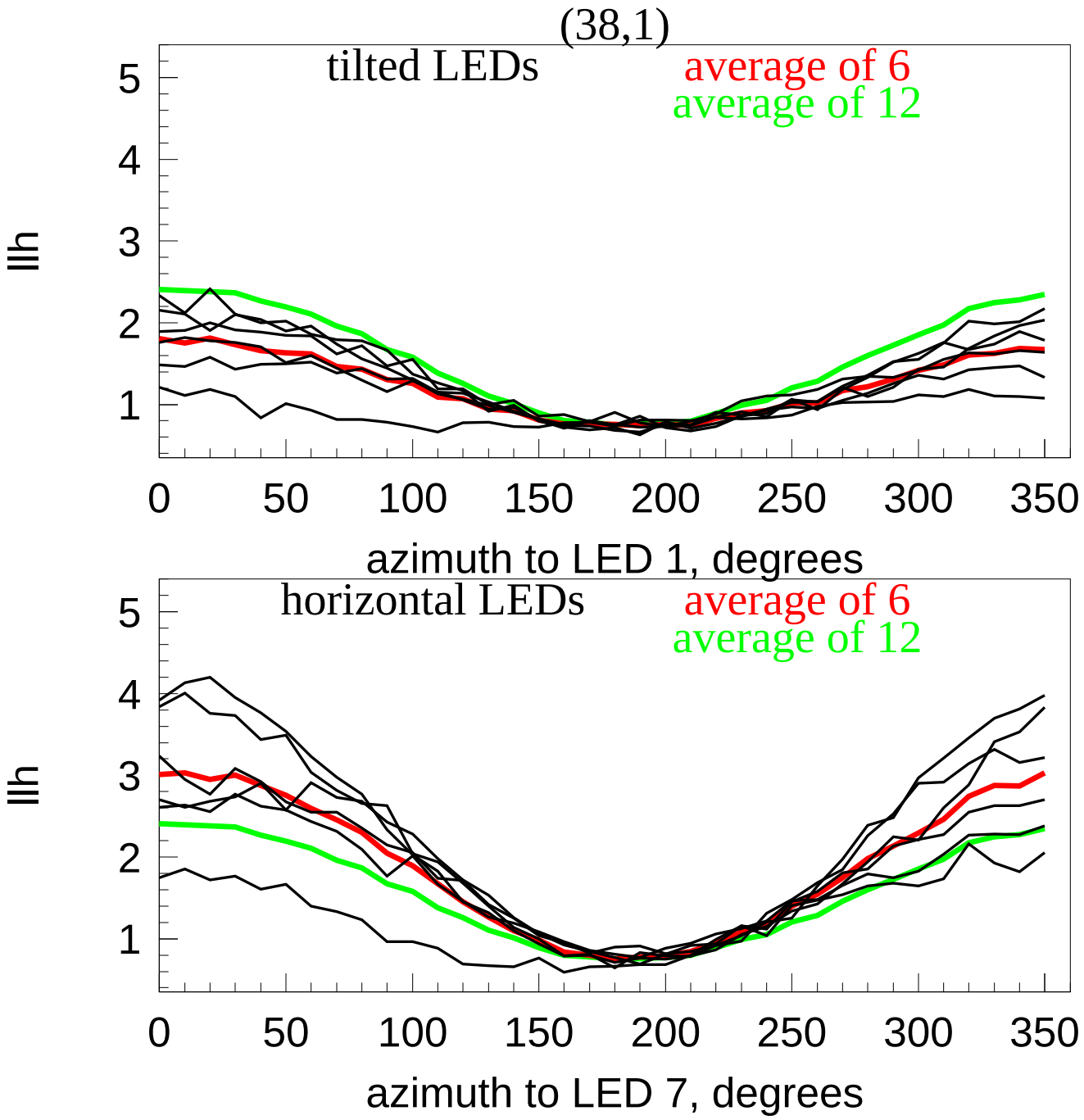

(37,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
5
11
70

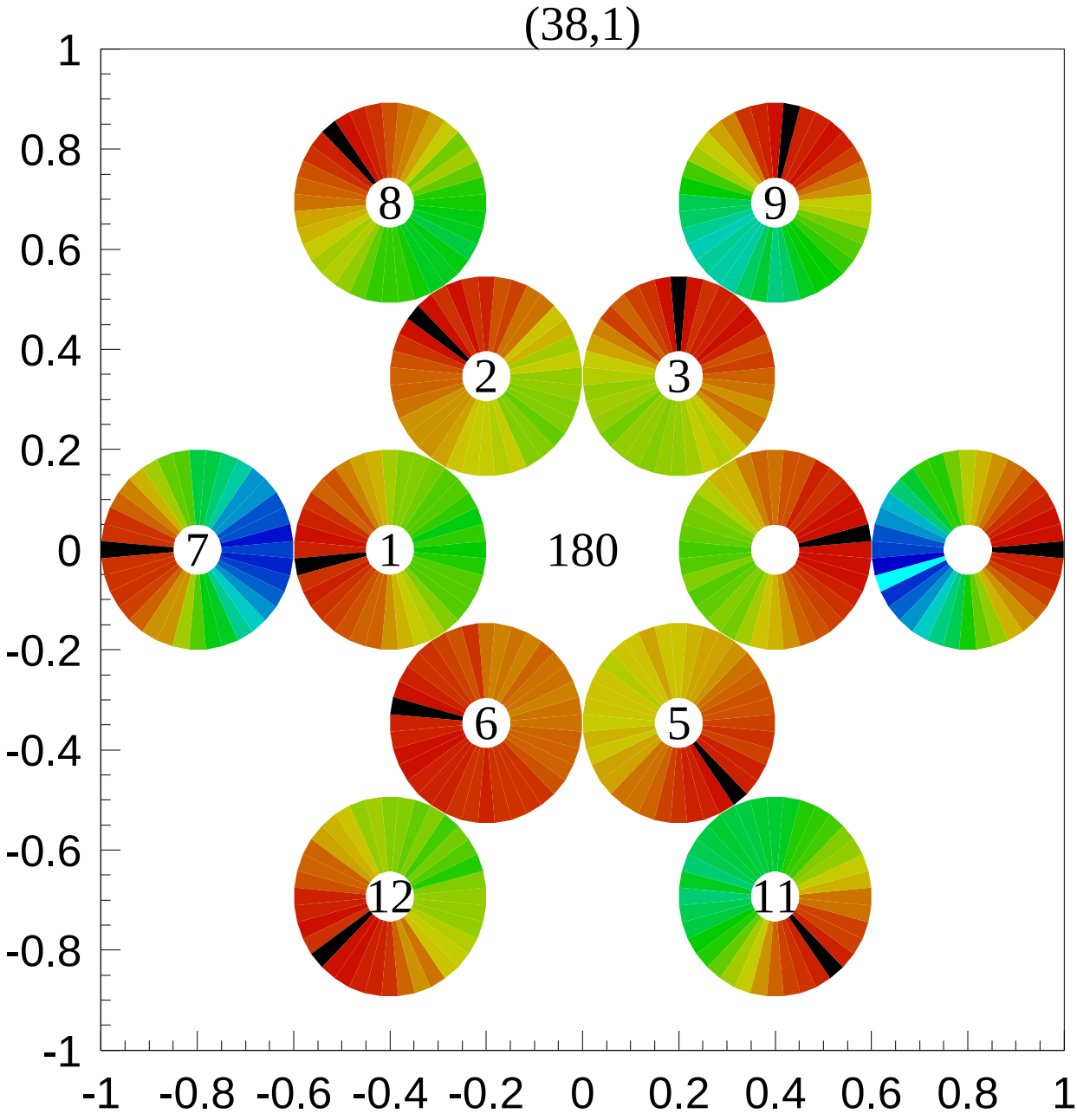

(37,49)
tilted LEDs
average of 6
average of 12
Ilh
45
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

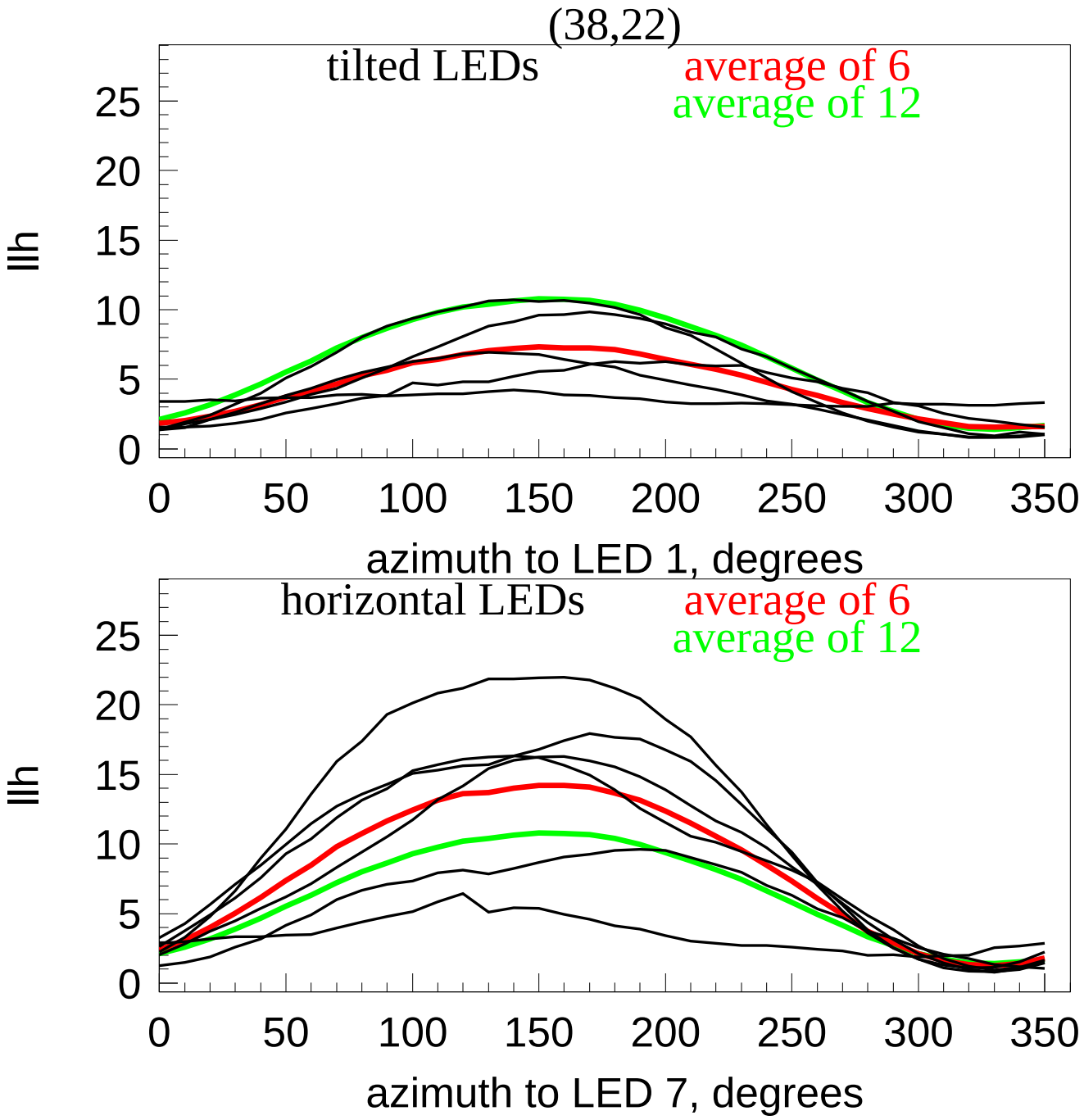

(37,49)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
1
2
12
6
110
3
9
5
4
11
10

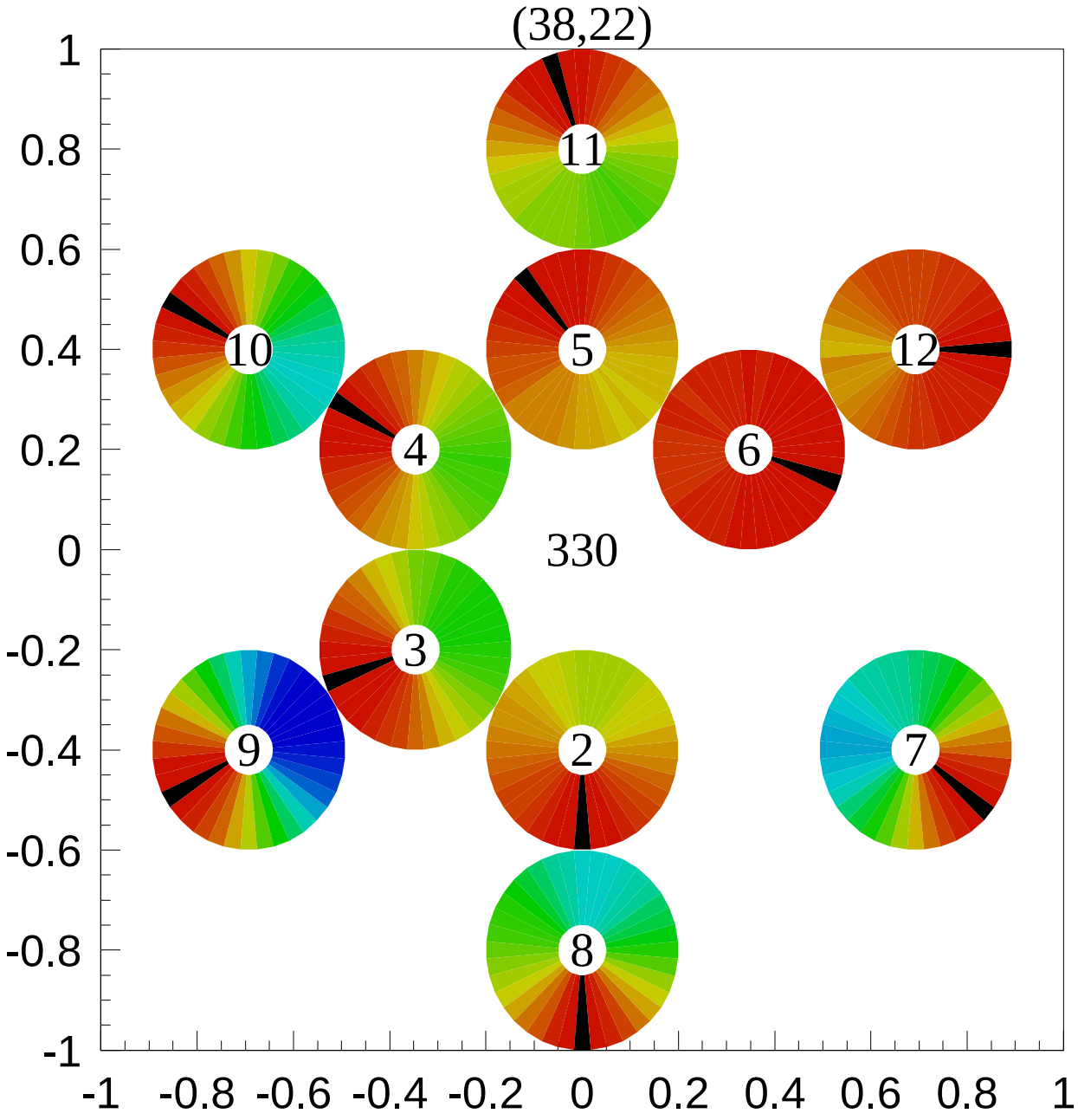

(37,56)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

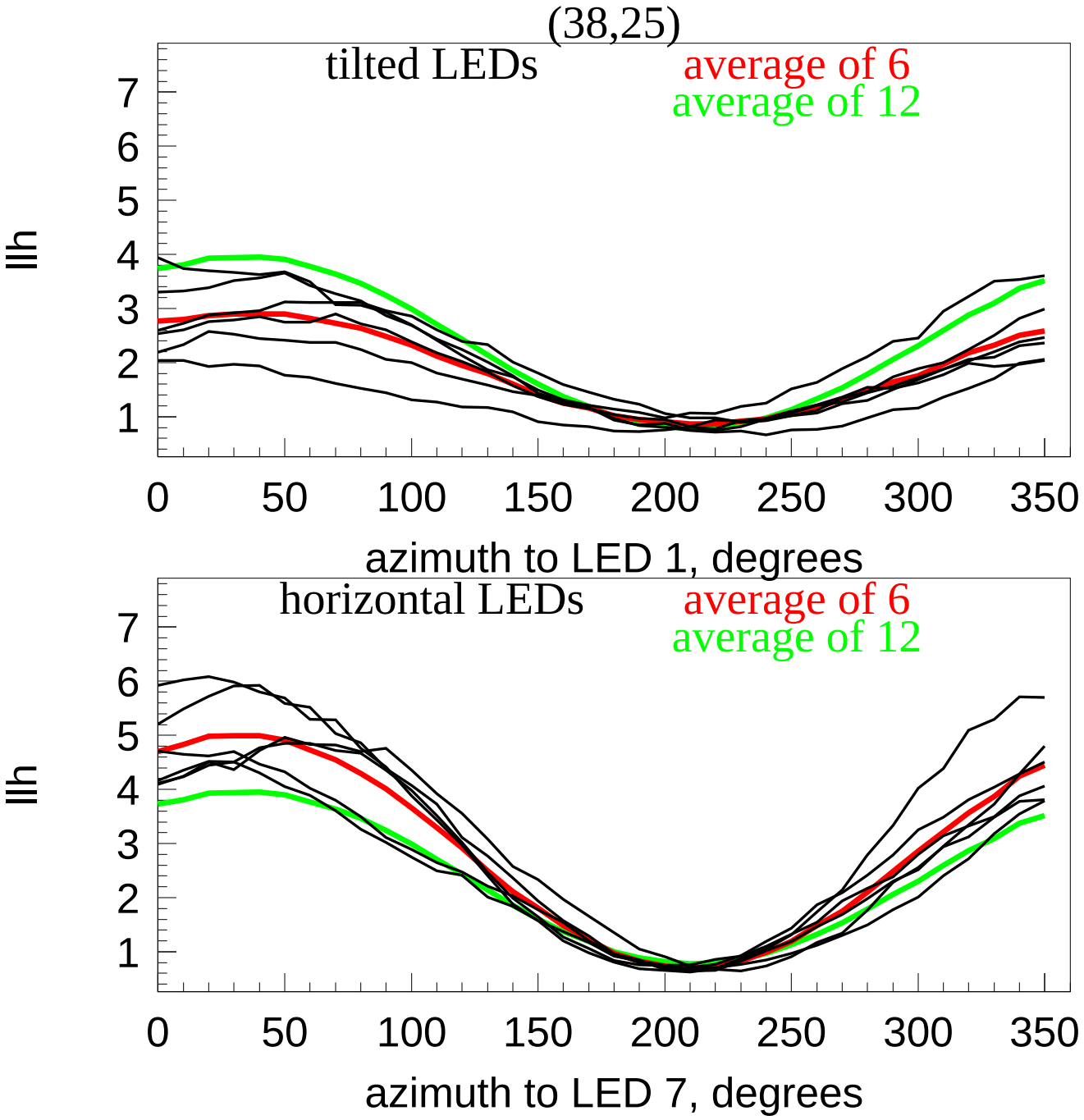

(37,56)
11
5
10
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

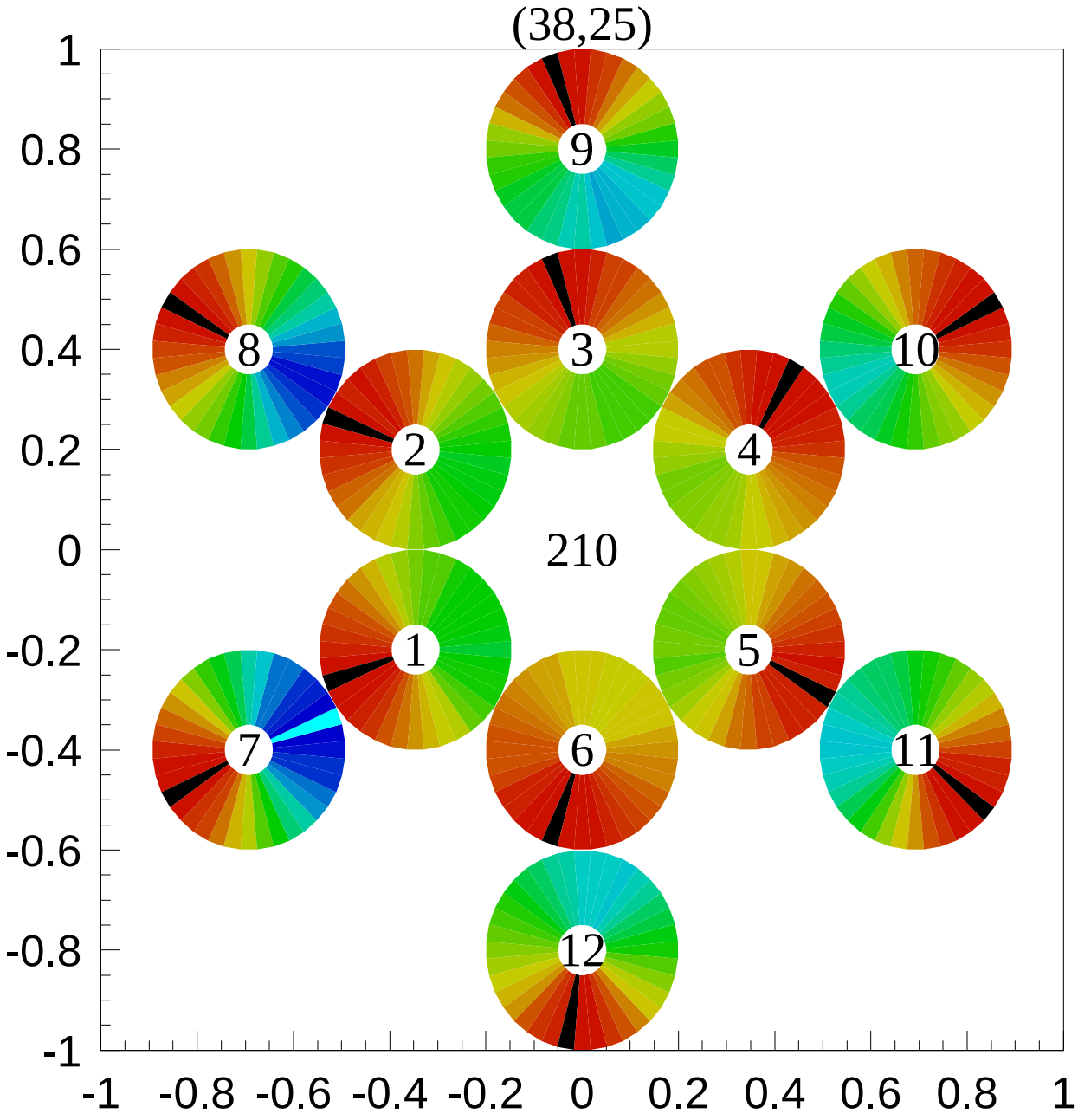

(38,1)
tilted LEDs
average of 6
average of 12
llh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

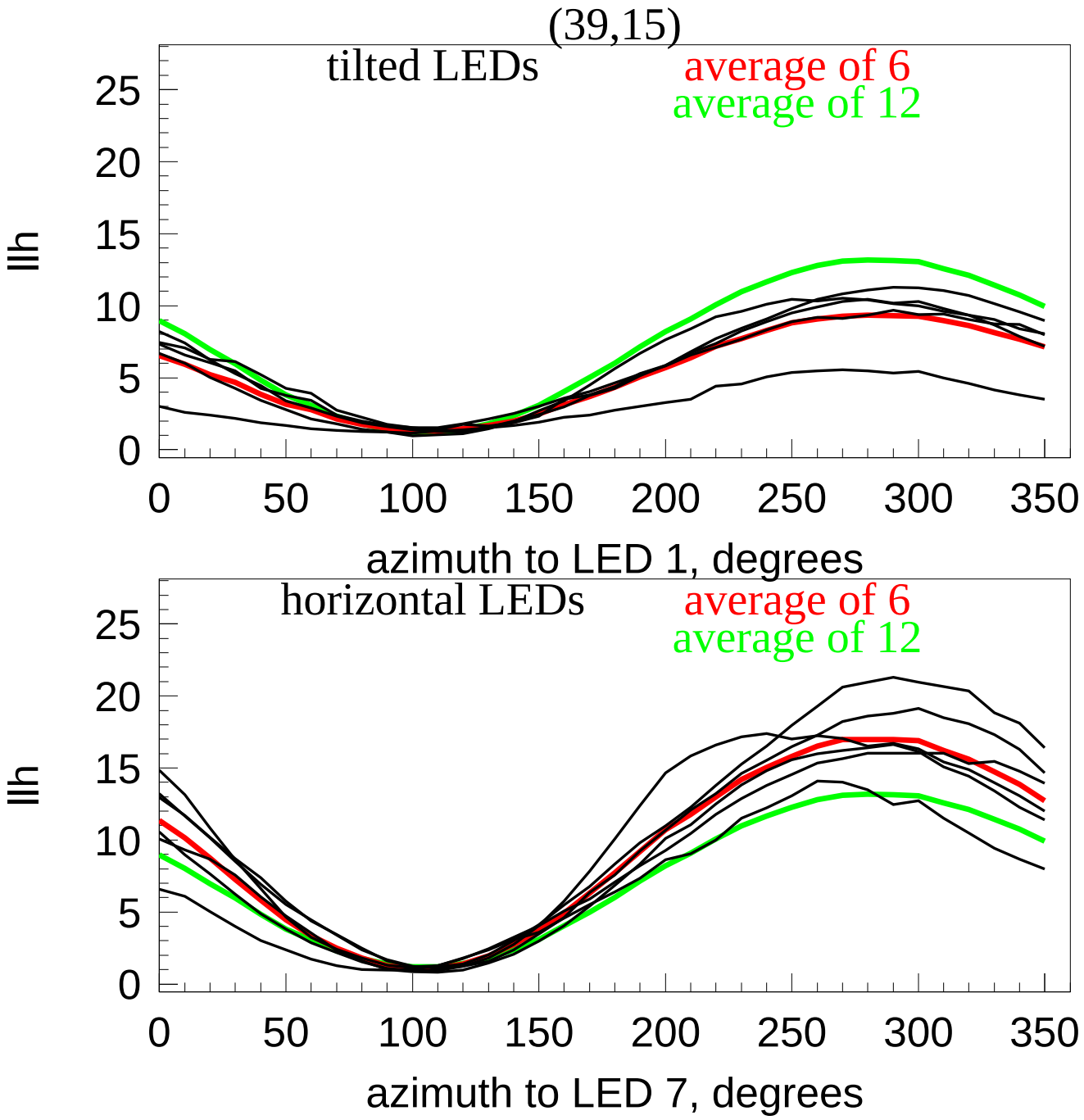

(38,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
9
2
3
7
1
180
6
5
12
11

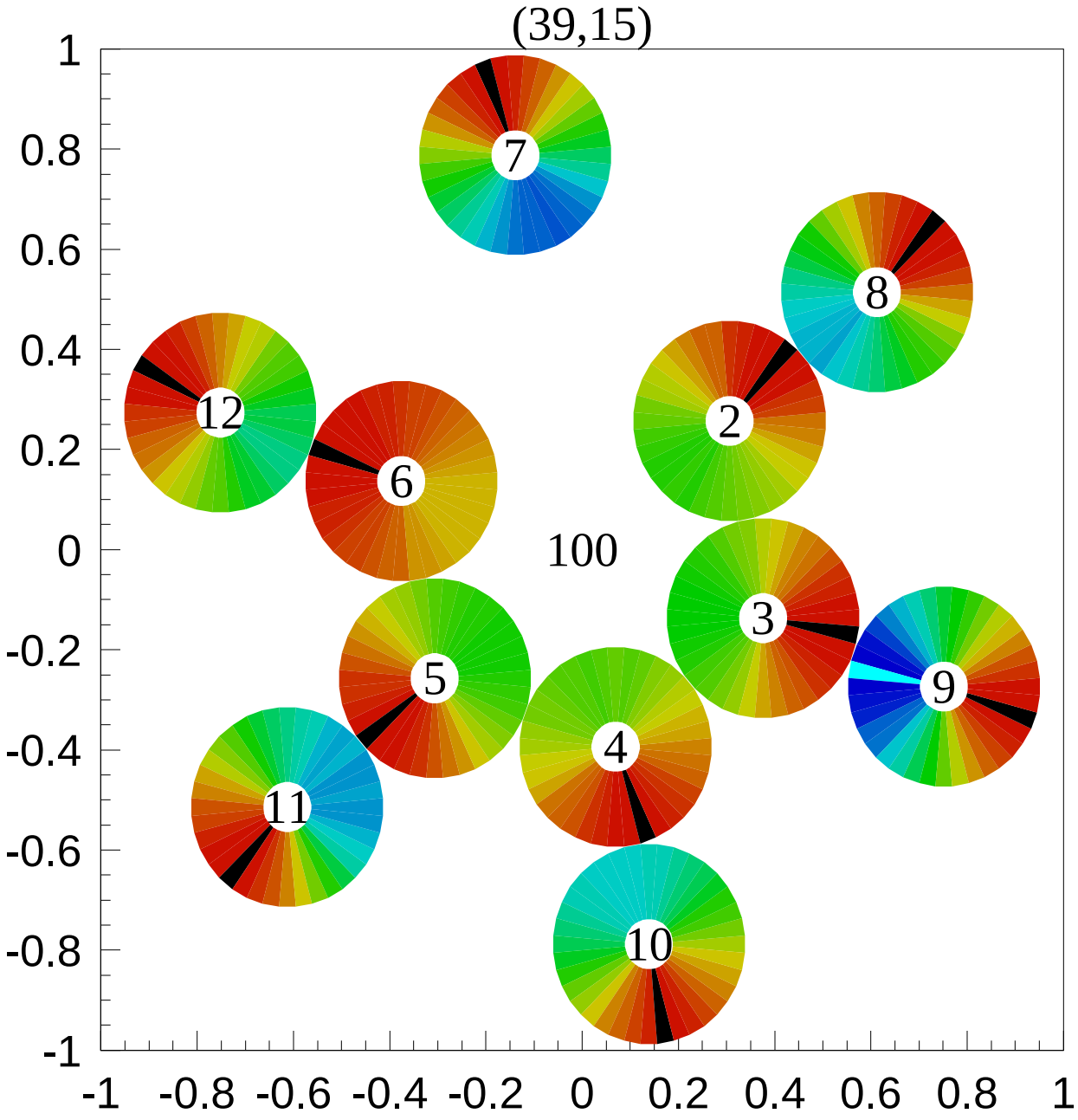

(38,22)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

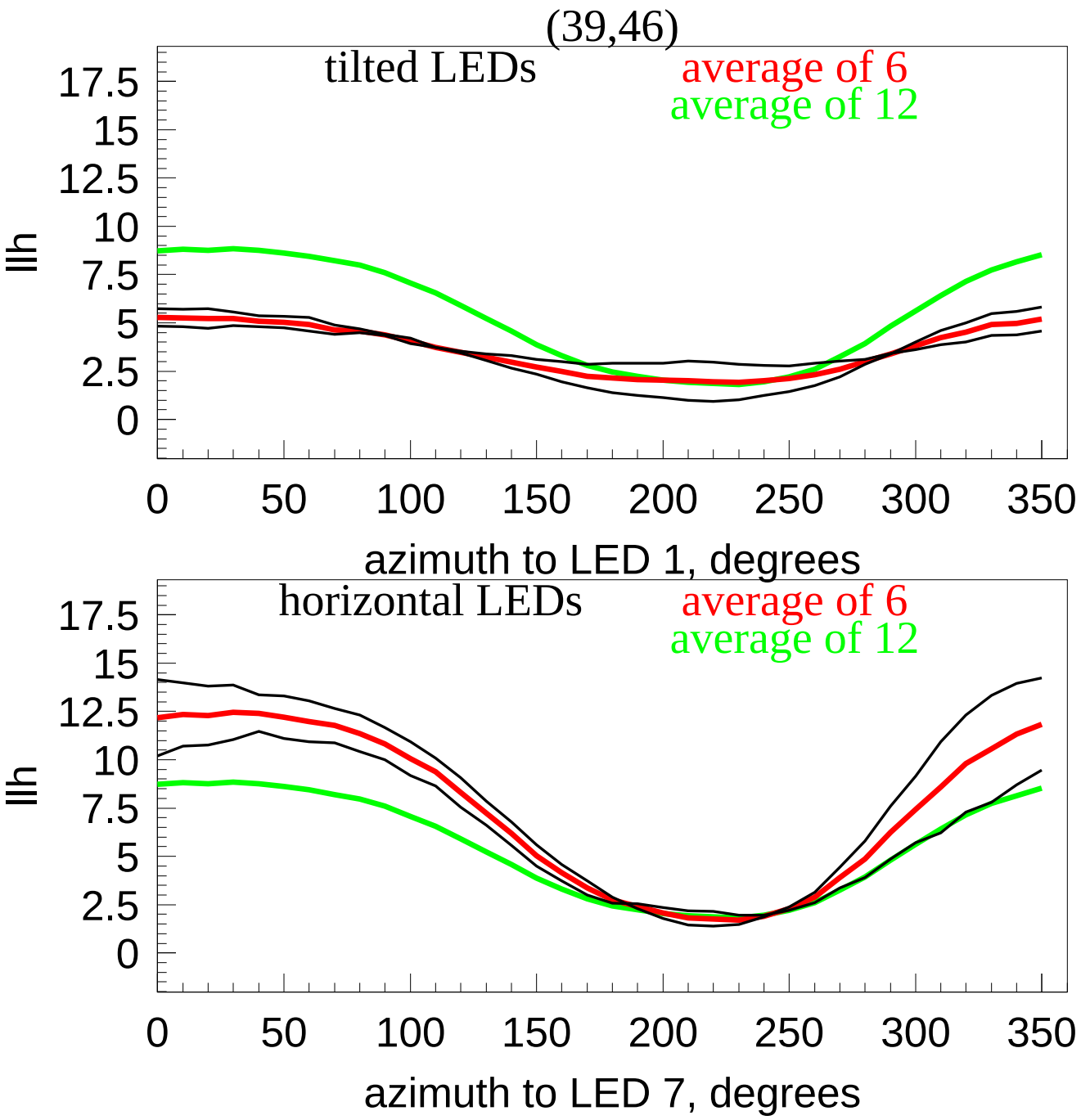

(38,22)
11
10
5
12
4
6
330
3
9
2
7
8
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

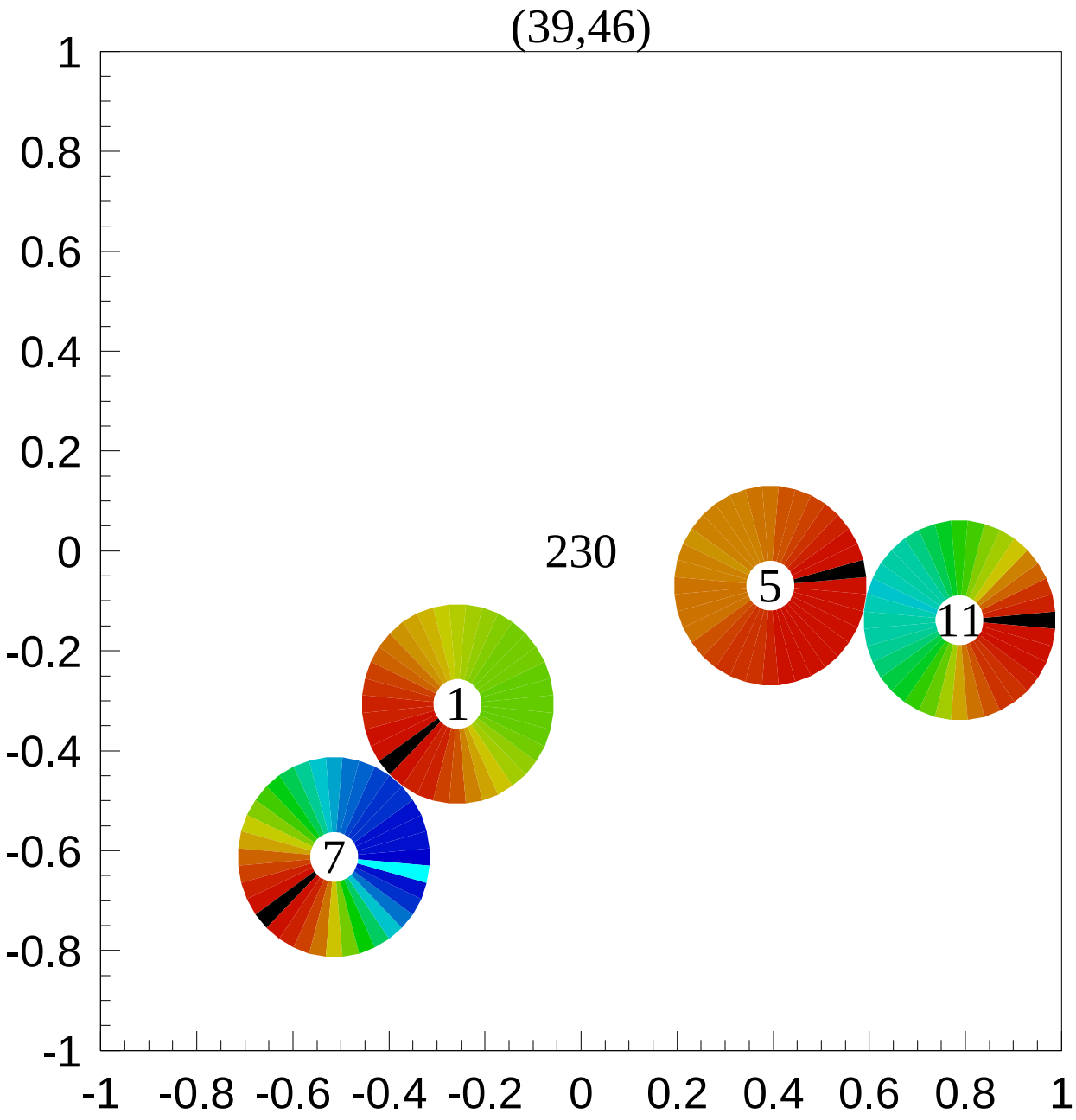

(38,25)
tilted LEDs
average of 6
average of 12
Ilh
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

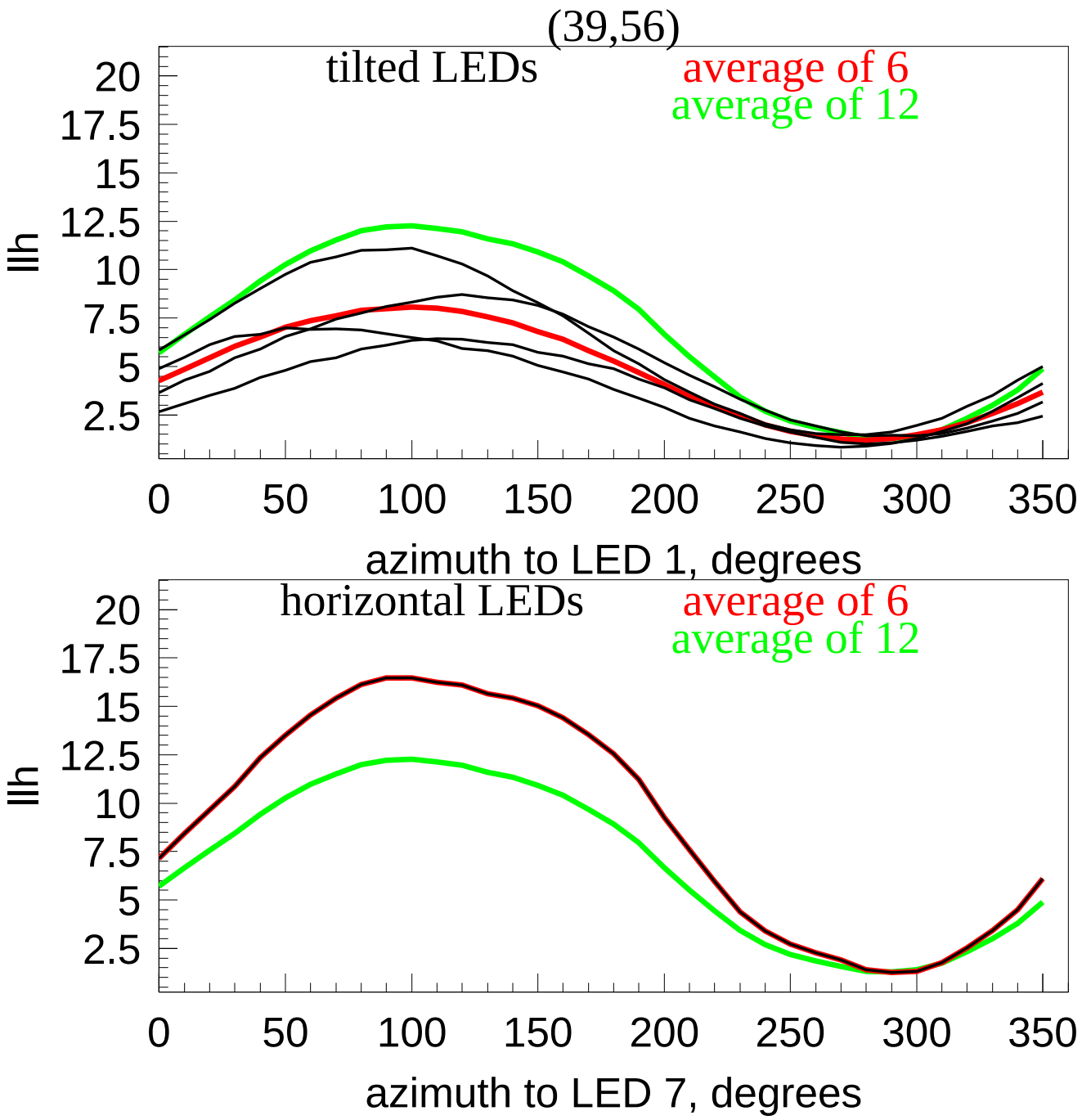

(38,25)
9
8
3
10
2
4
210
1
5
7
6
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

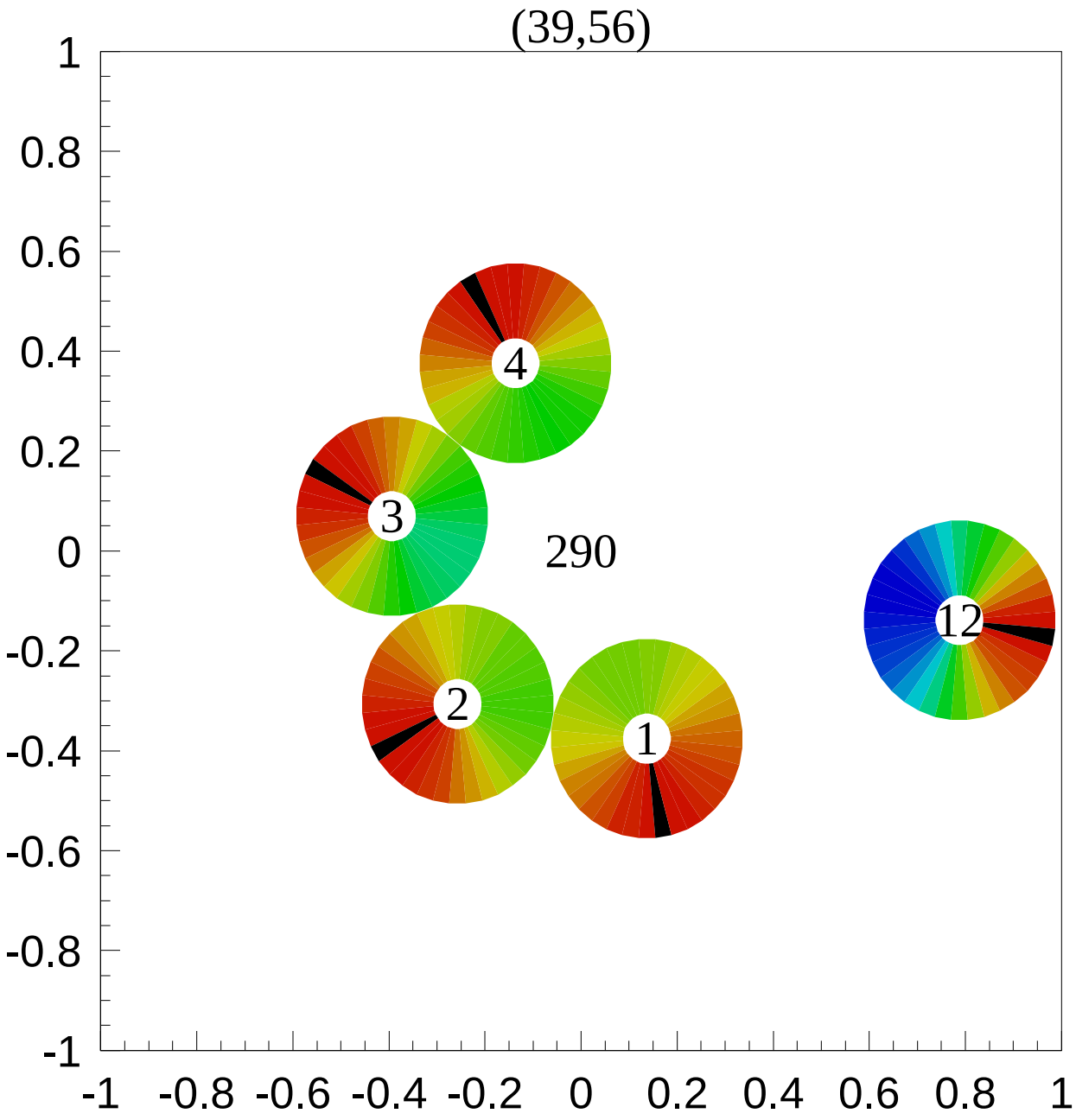

(39,15)
tilted LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

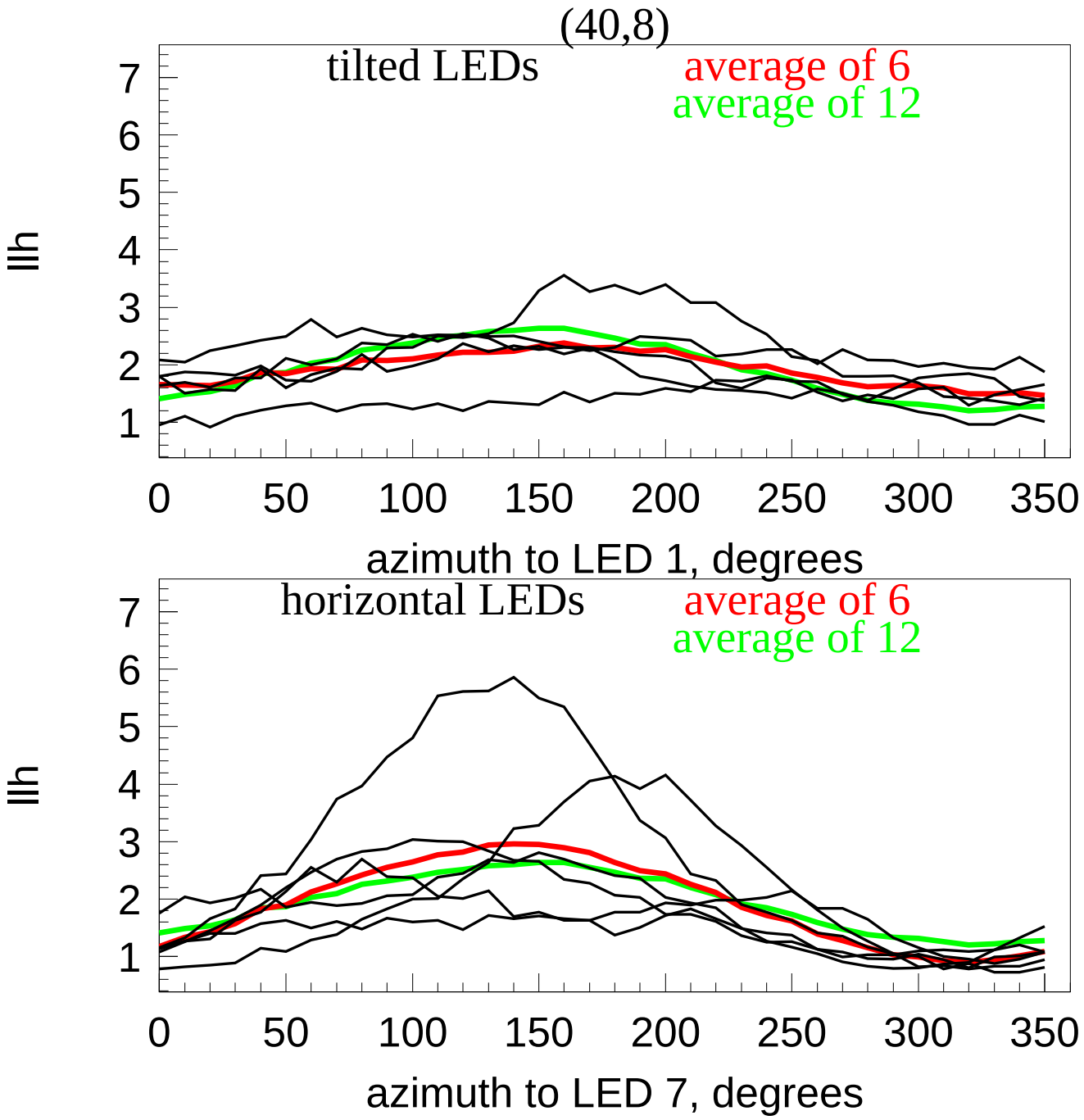

(39,15)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
12
2
6
100
3
9
5
4
11
10

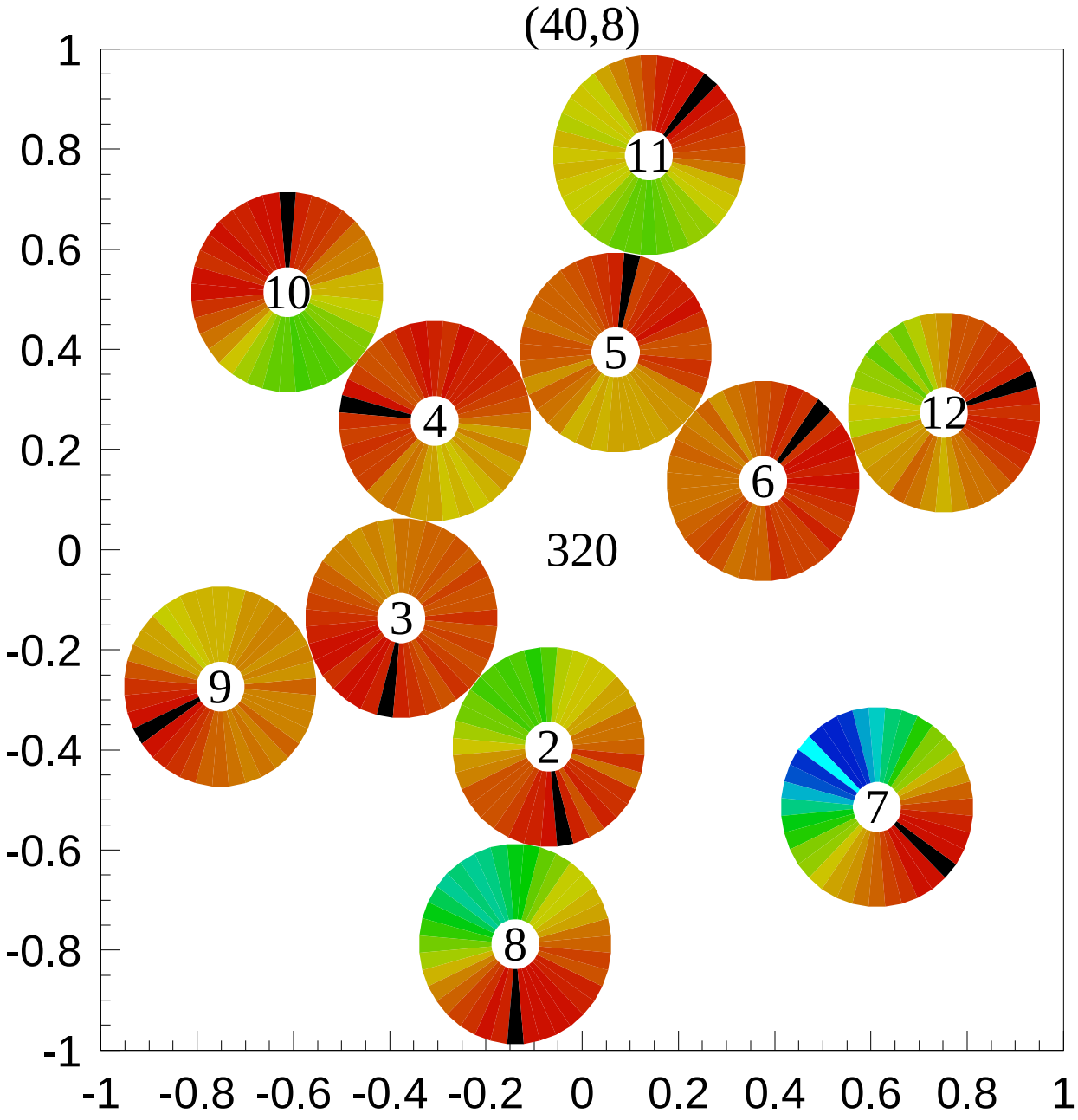

(39,46)
tilted LEDs
average of 6
average of 12
llh
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

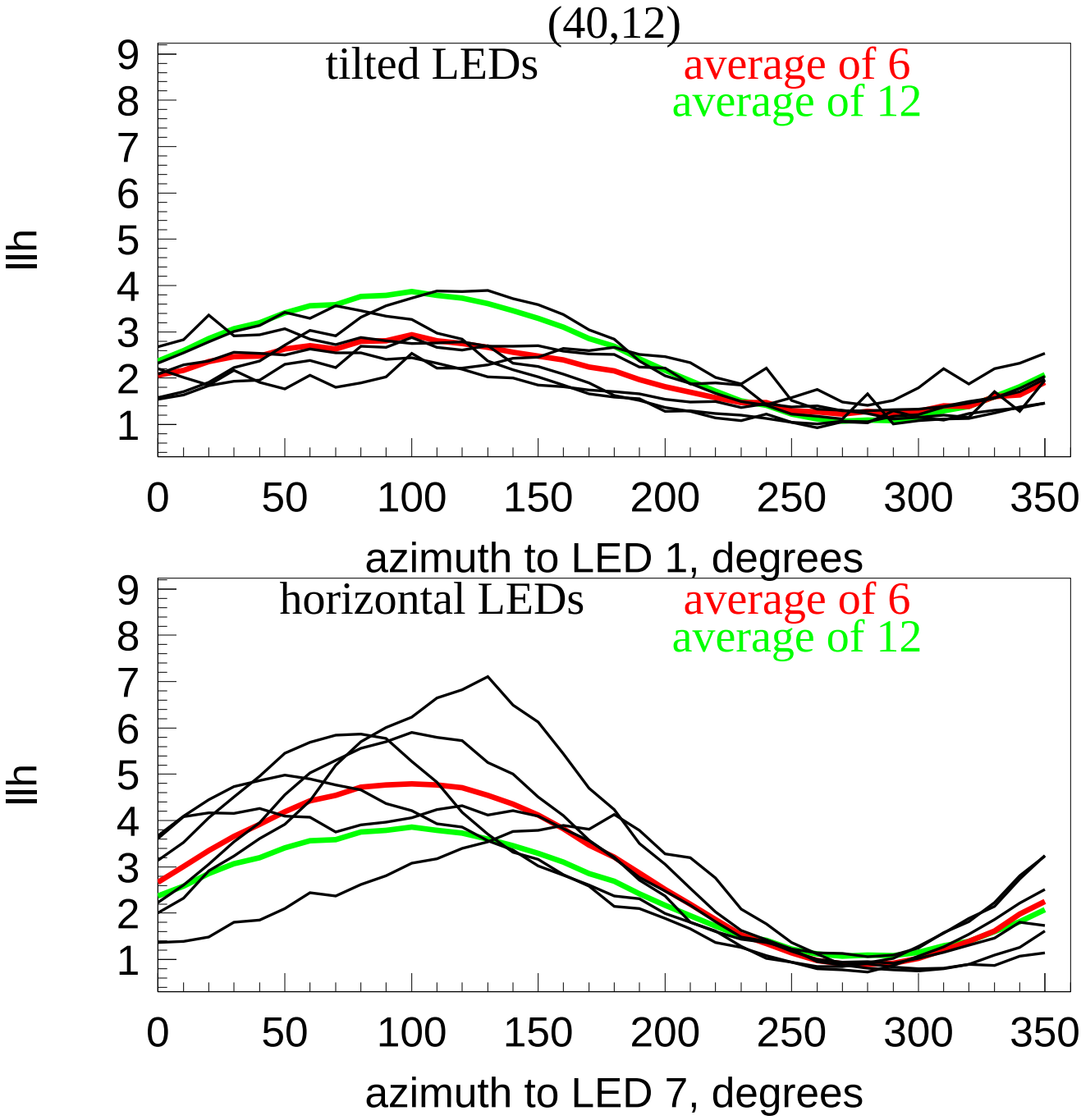

(39,46)
230
1
5
11
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

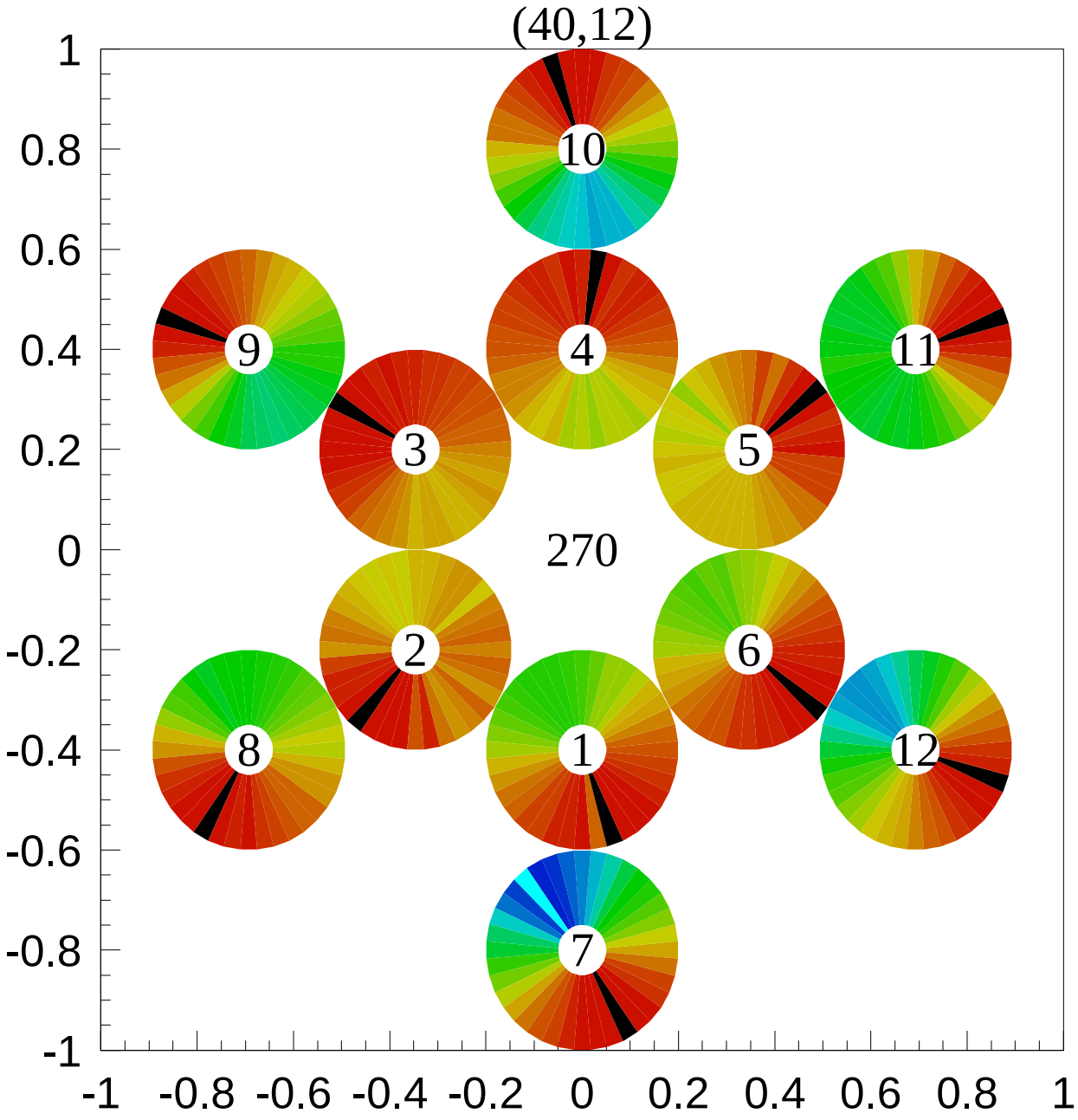

(39,56)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

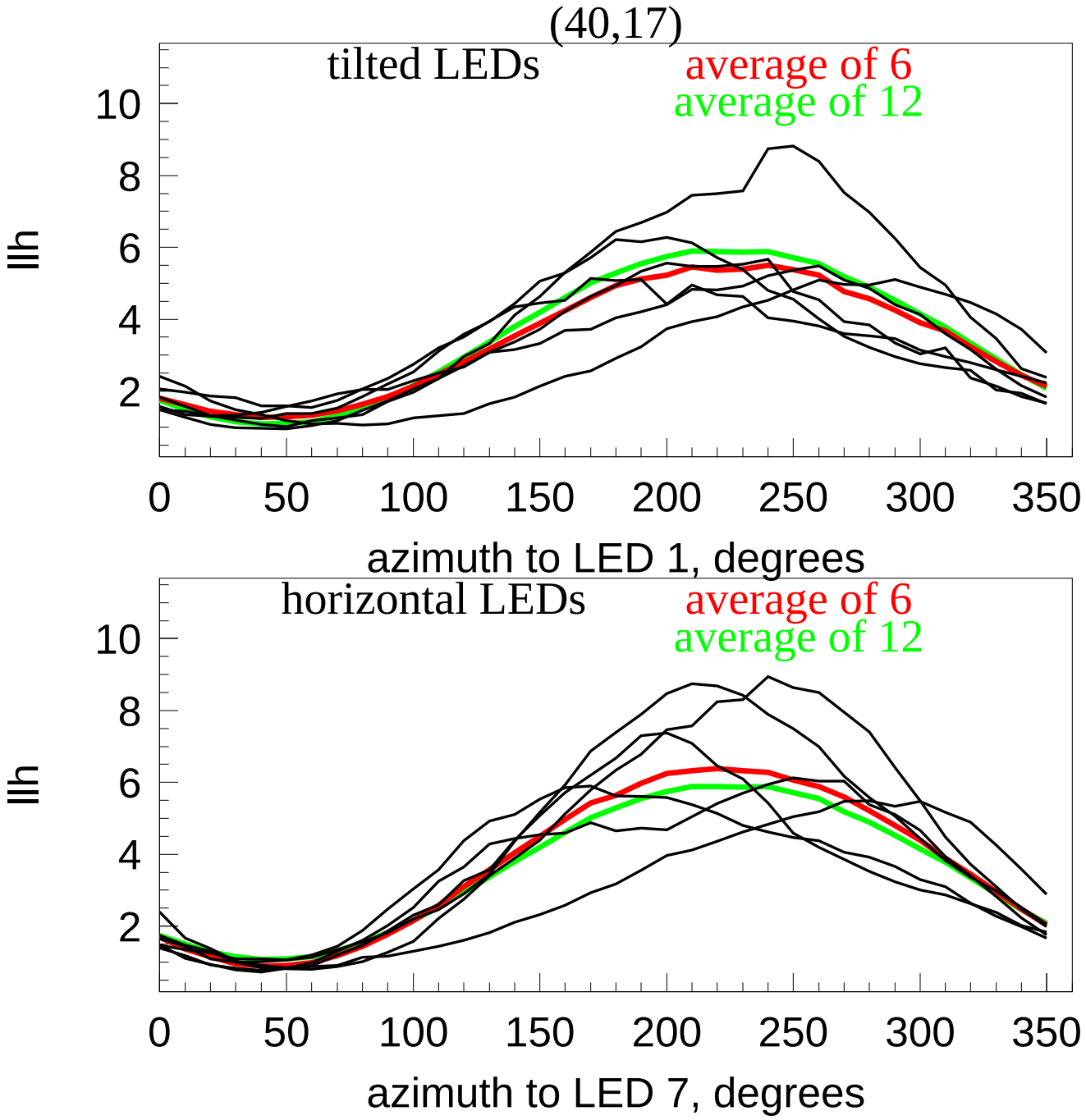

(39,56)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
4
3
290
12
2
1

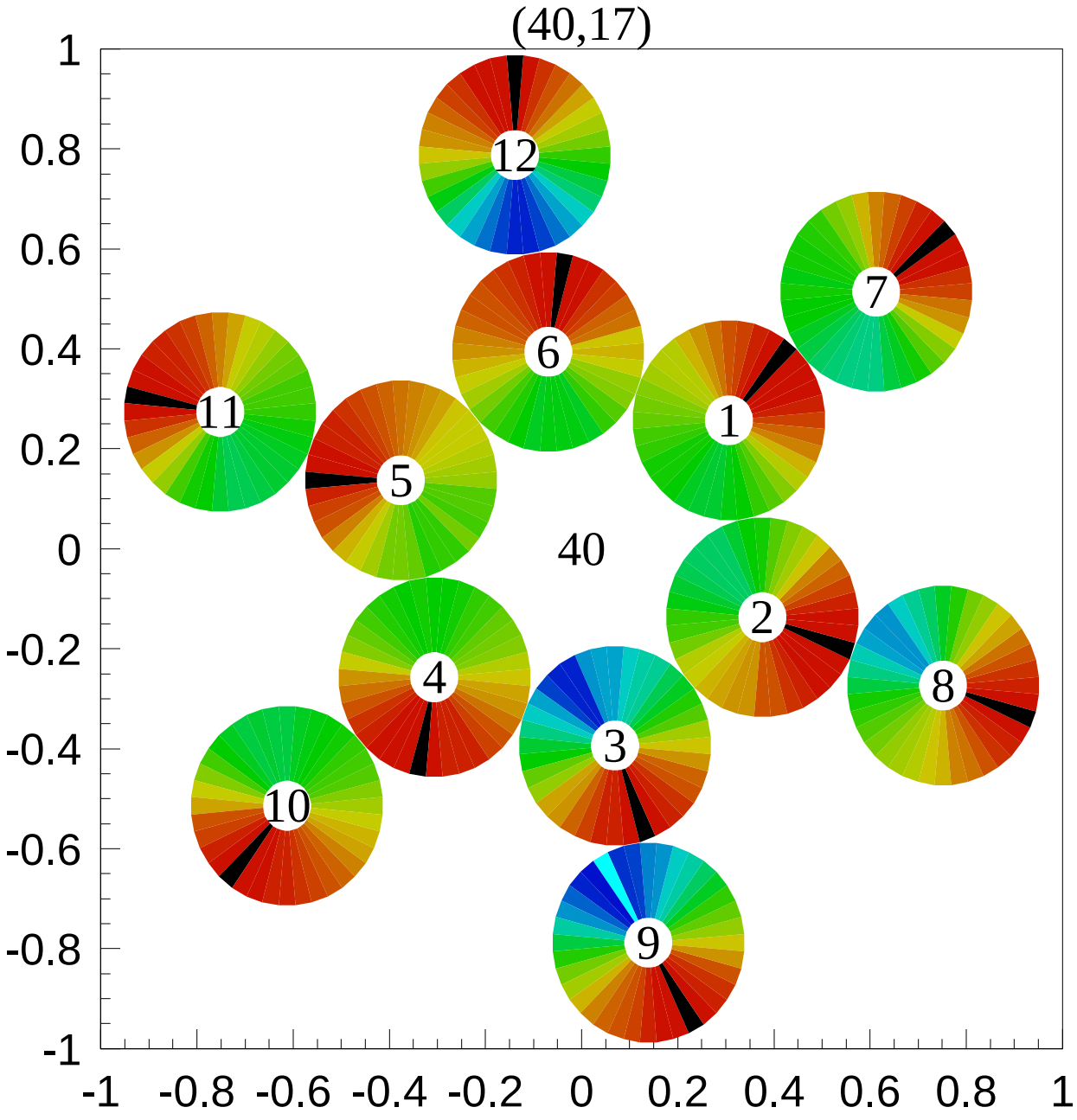

(40,8)
tilted LEDs
average of 6
average of 12
Ilh
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

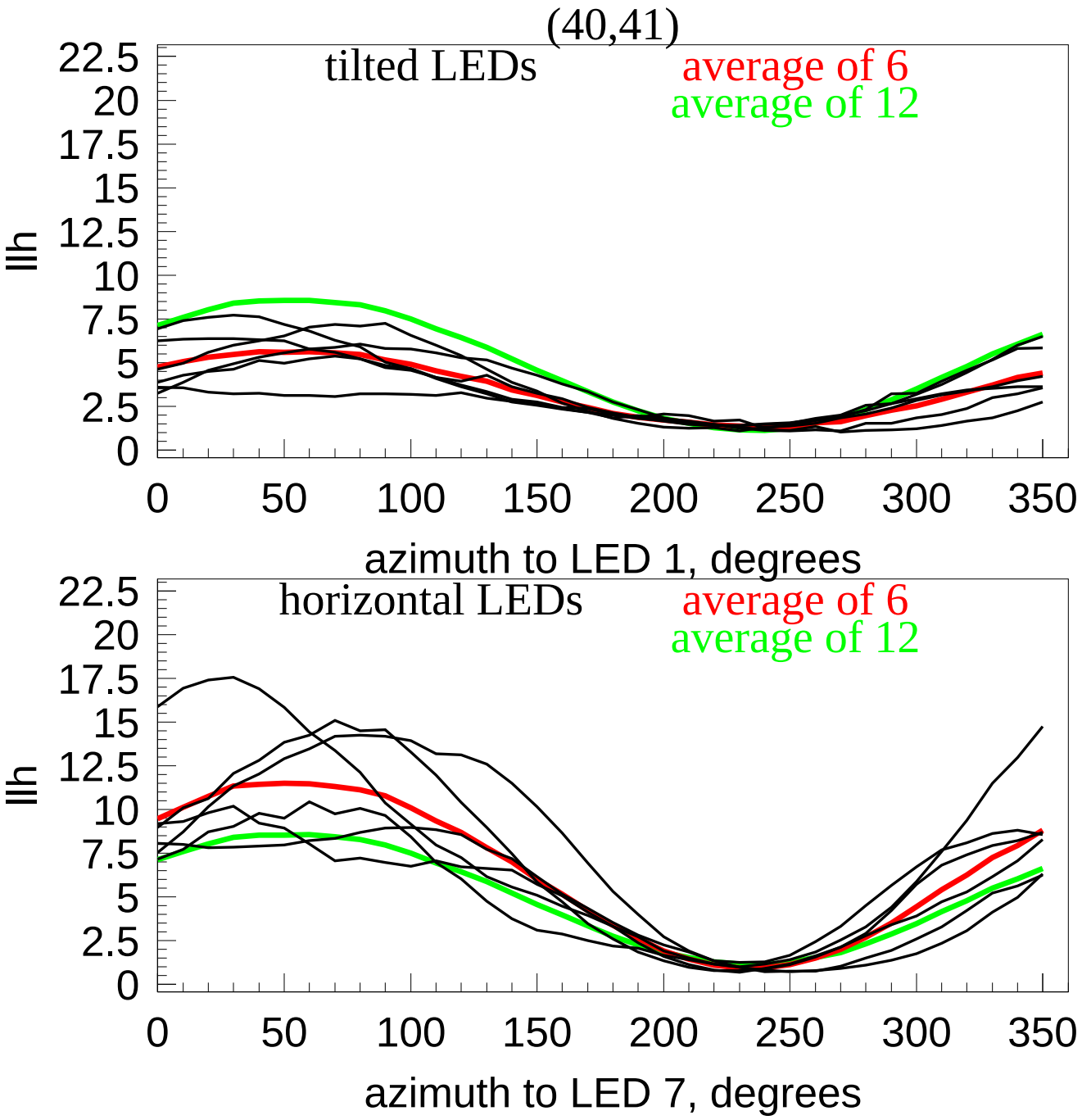

(40,8)
11
10
5
4
12
6
320
3
9
2
7
8
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

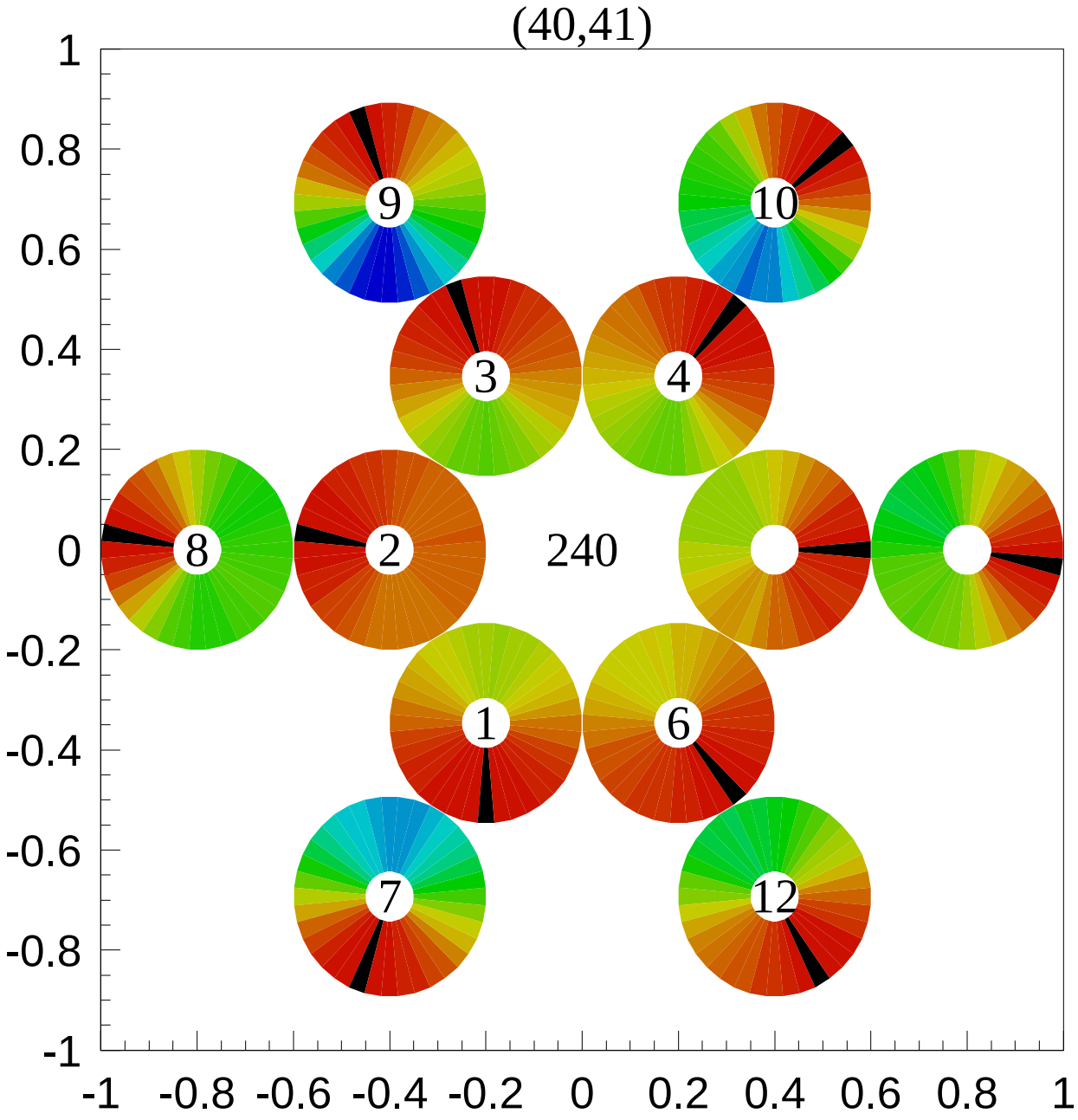

(40,12)
tilted LEDs
average of 6
average of 12
llh
9
8
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

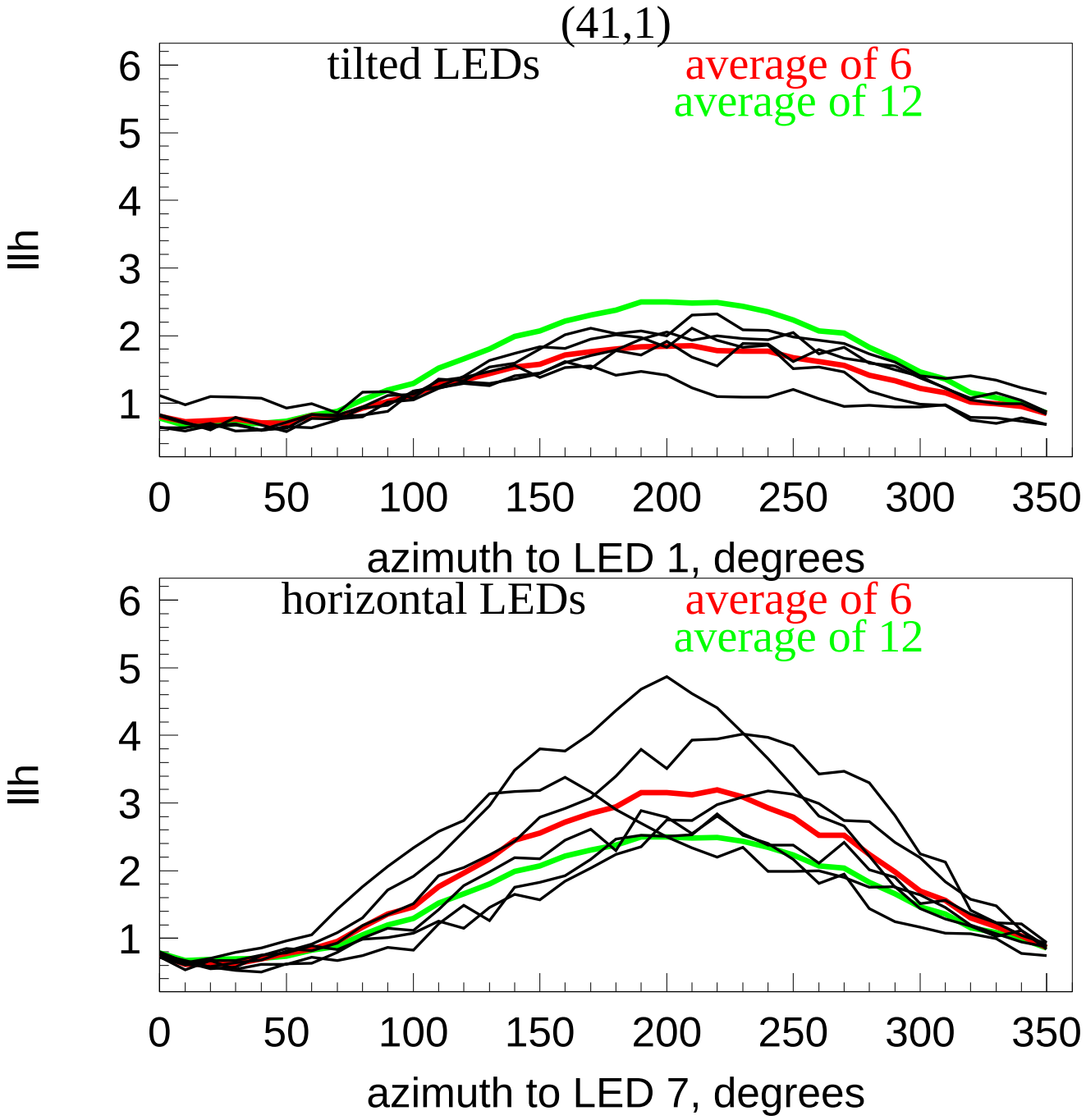

(40,12)
10
9
4
11
3
5
270
2
6
8
1
12
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

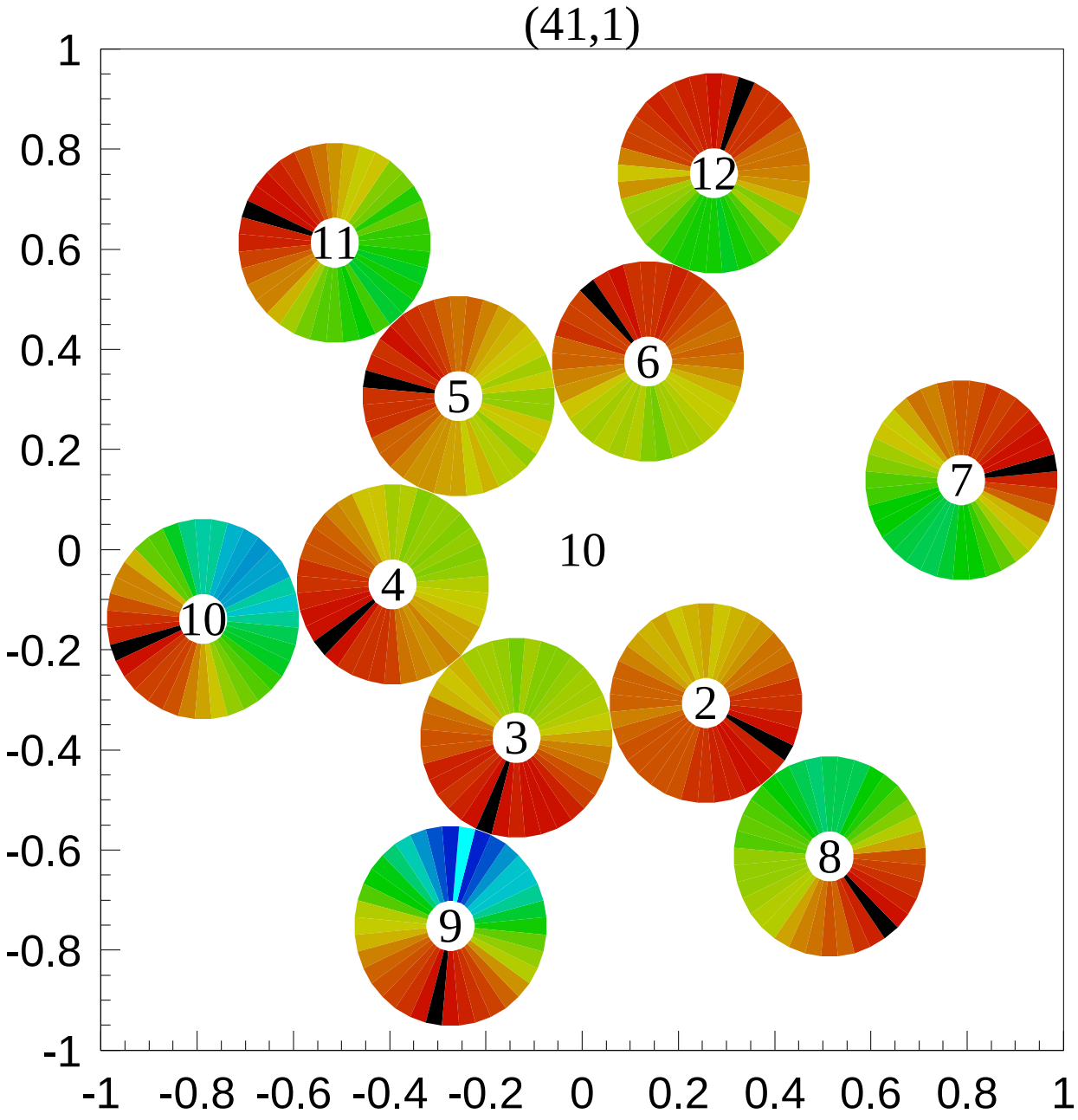

(40,17)
tilted LEDs
average of 6
average of 12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

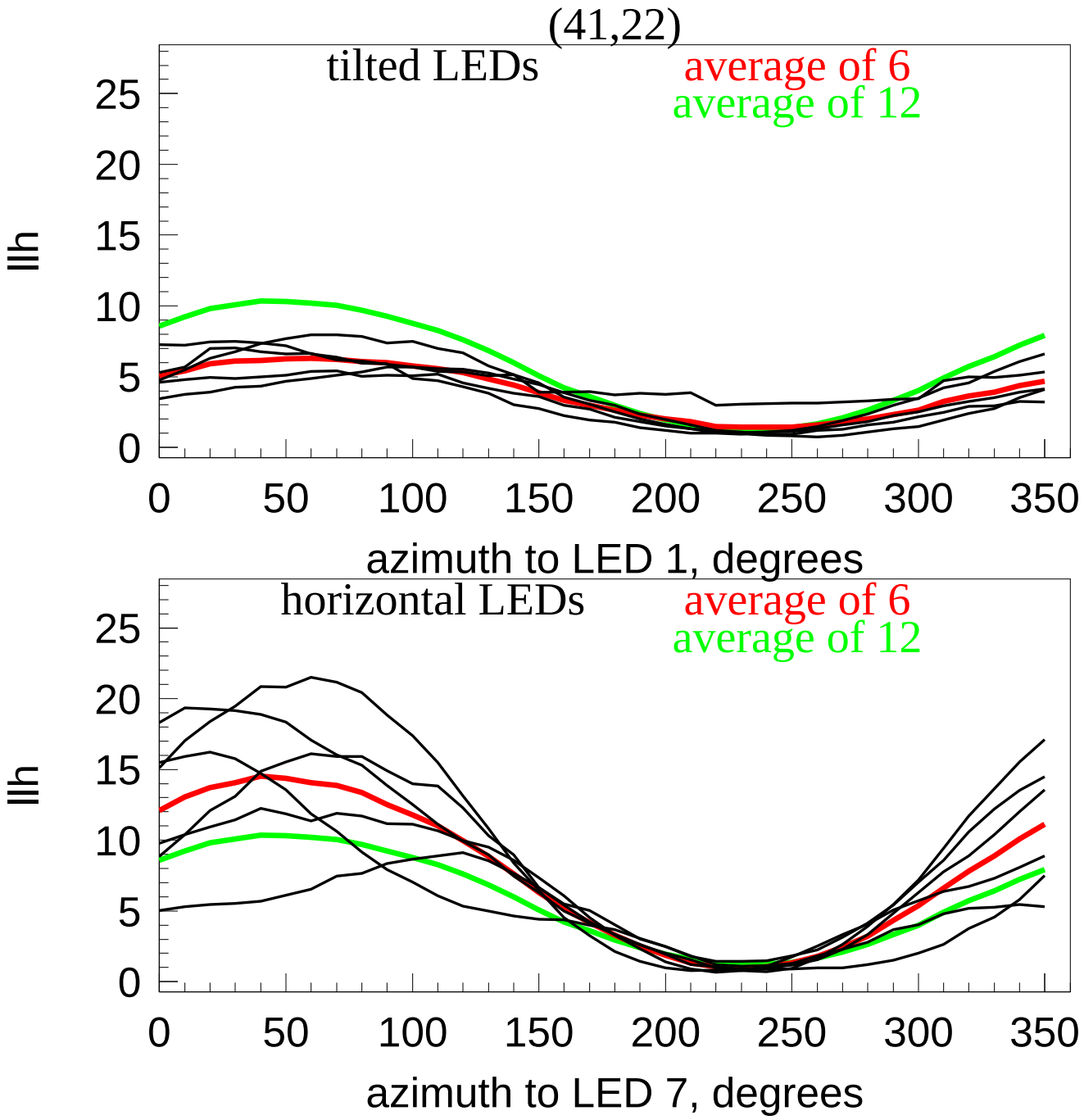

(40,17)
12
7
6
11
1
5
40
2
8
4
3
10
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

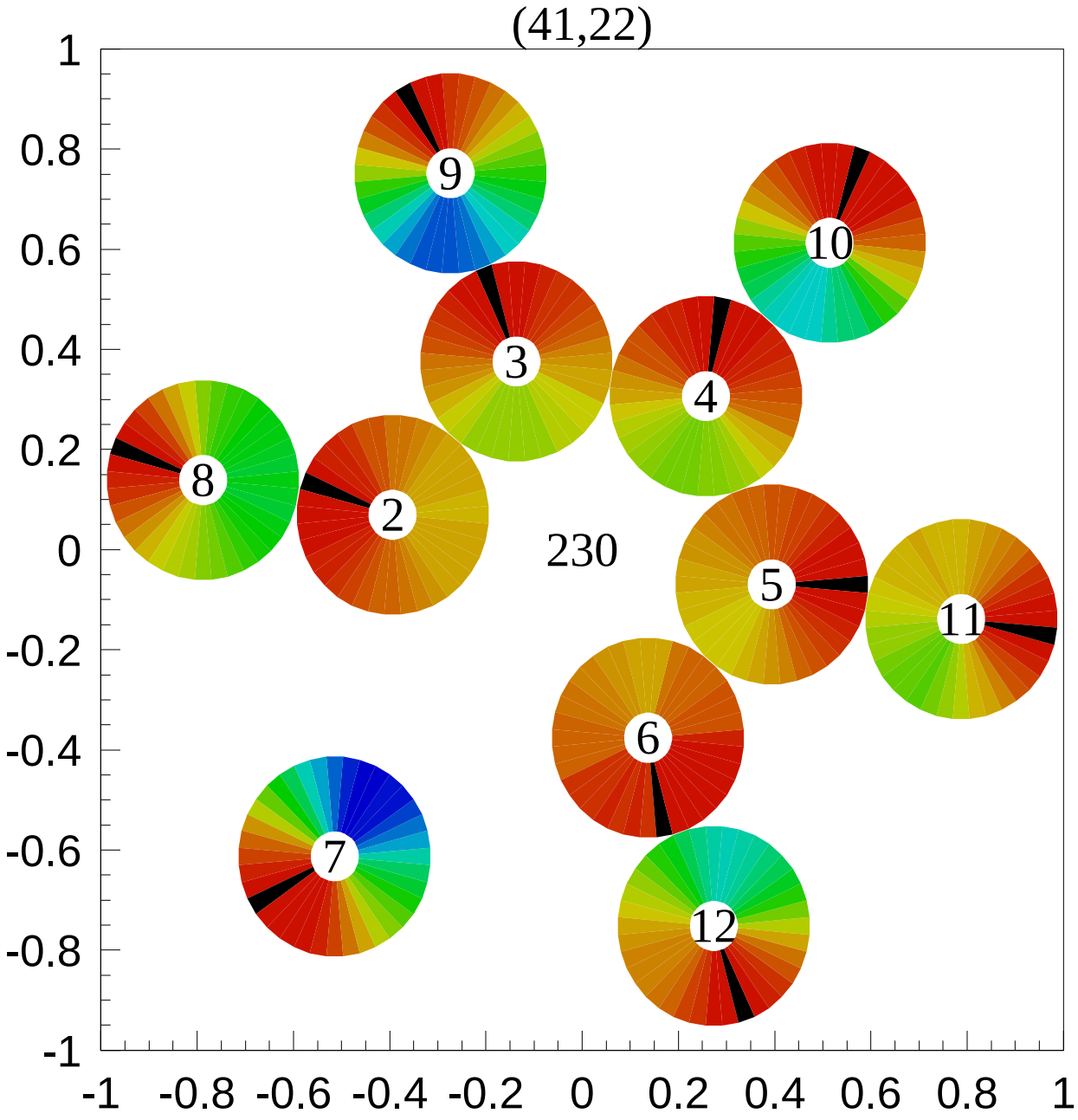

(40,41)
tilted LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

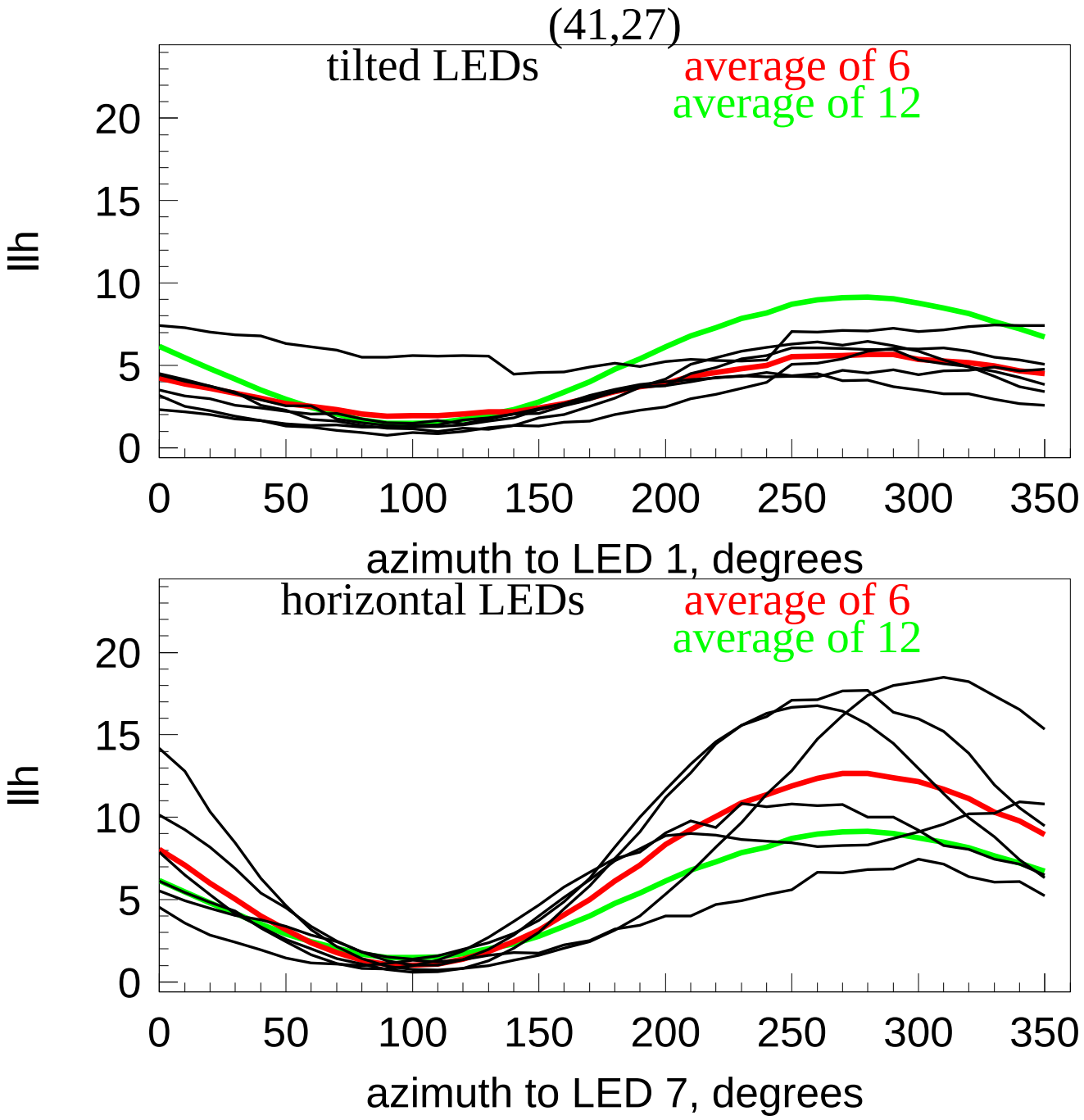

(40,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
10
3
4
8
2
240
1
6
7
12

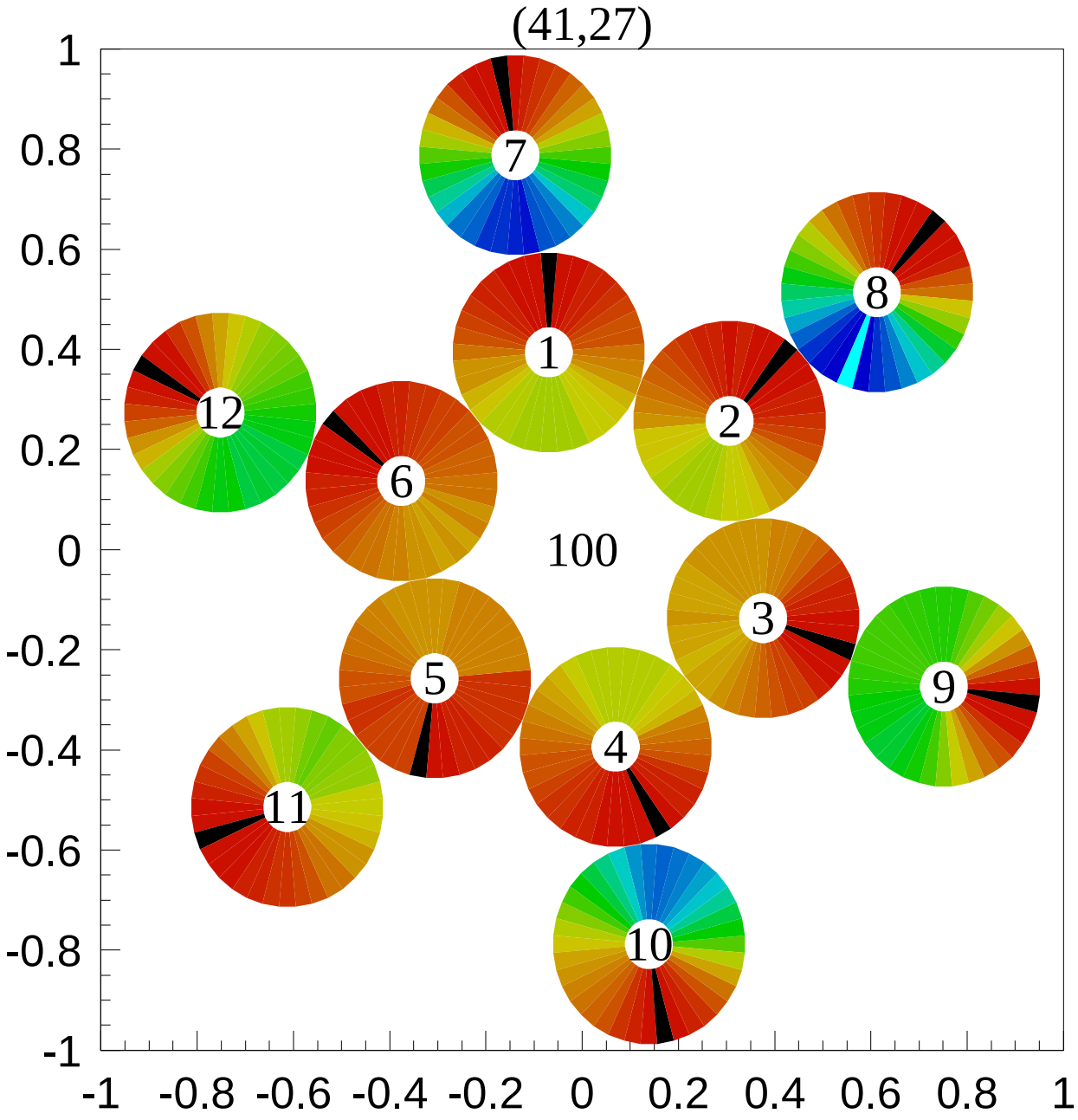

(41,1)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

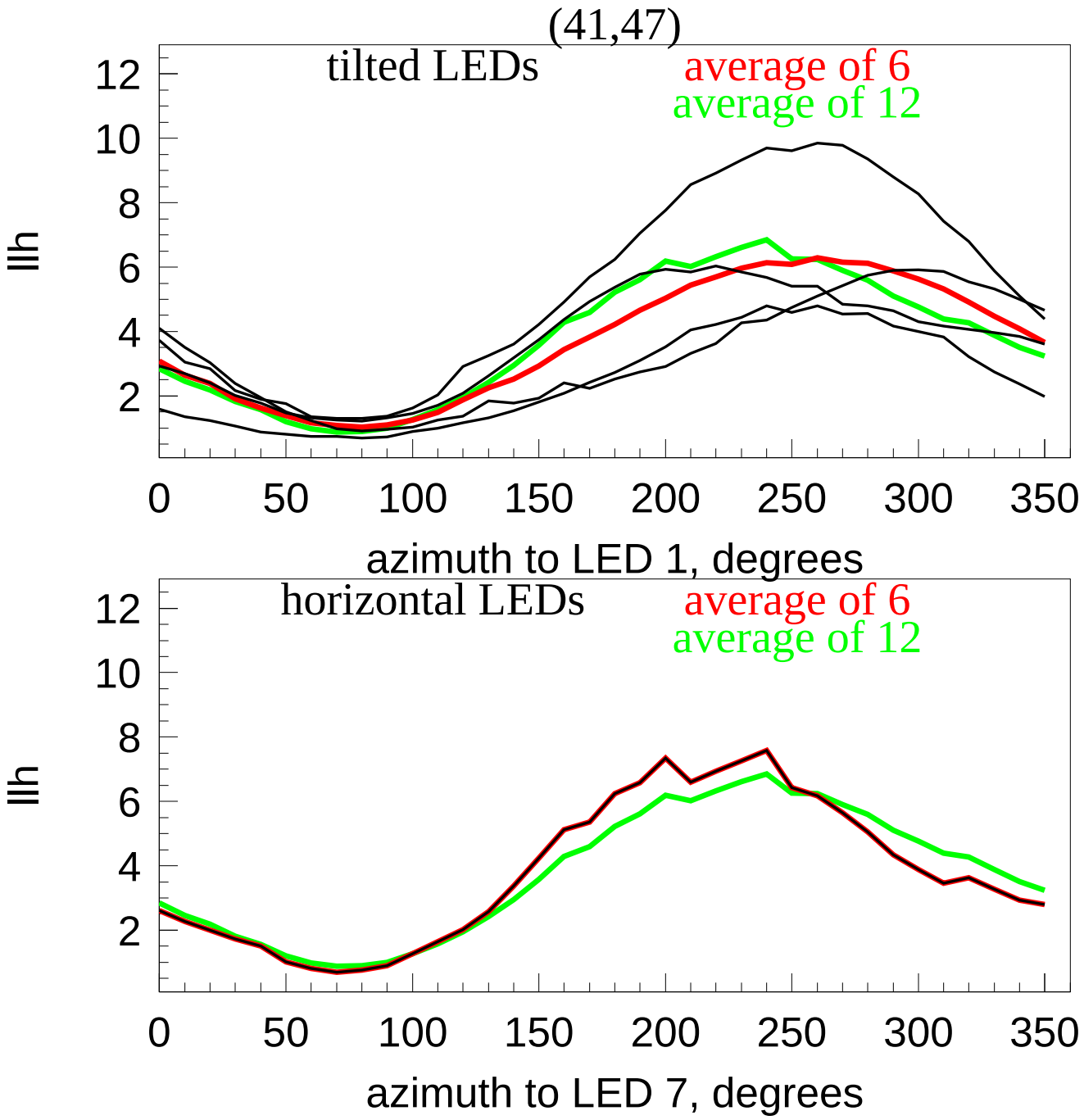

(41,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
11
6
5
7
10
4
10
2
3
8
9

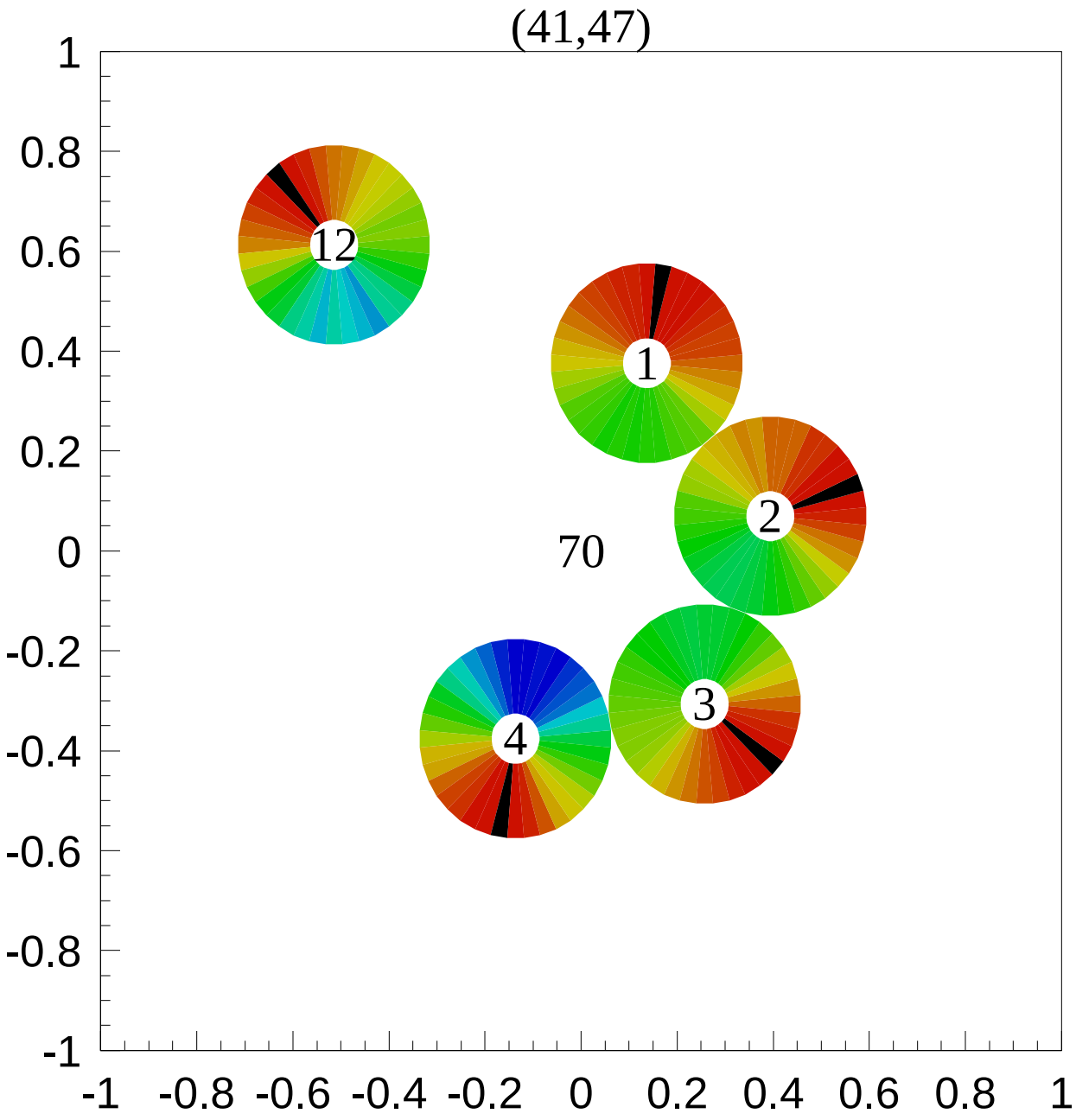

(41,22)
tilted LEDs
average of 6
average of 12
25
20
15
10
5
0
Ilh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
25
20
15
10
5
0
Ilh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

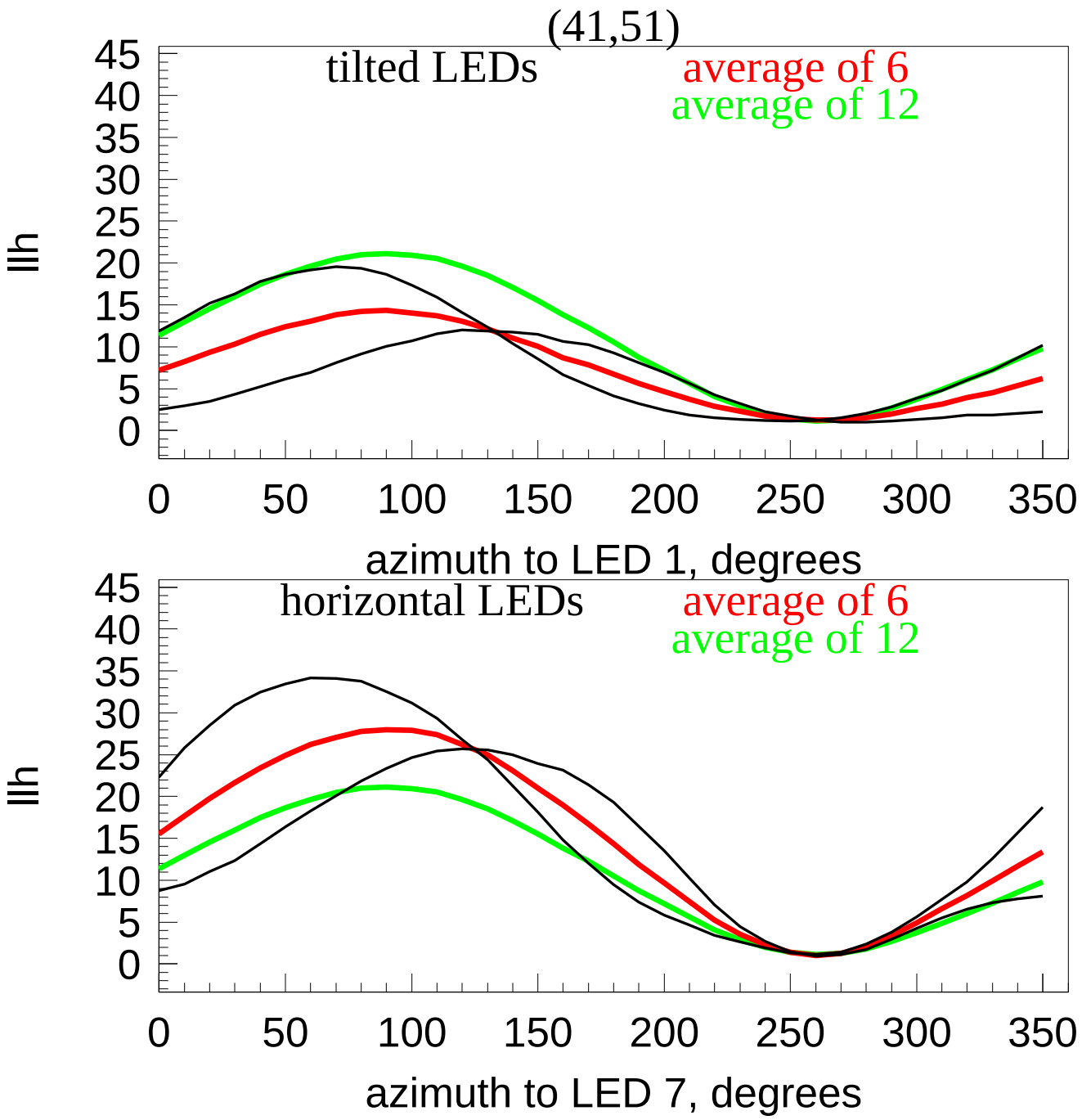

(41,22)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
10
3
4
8
2
230
5
11
6
7
12

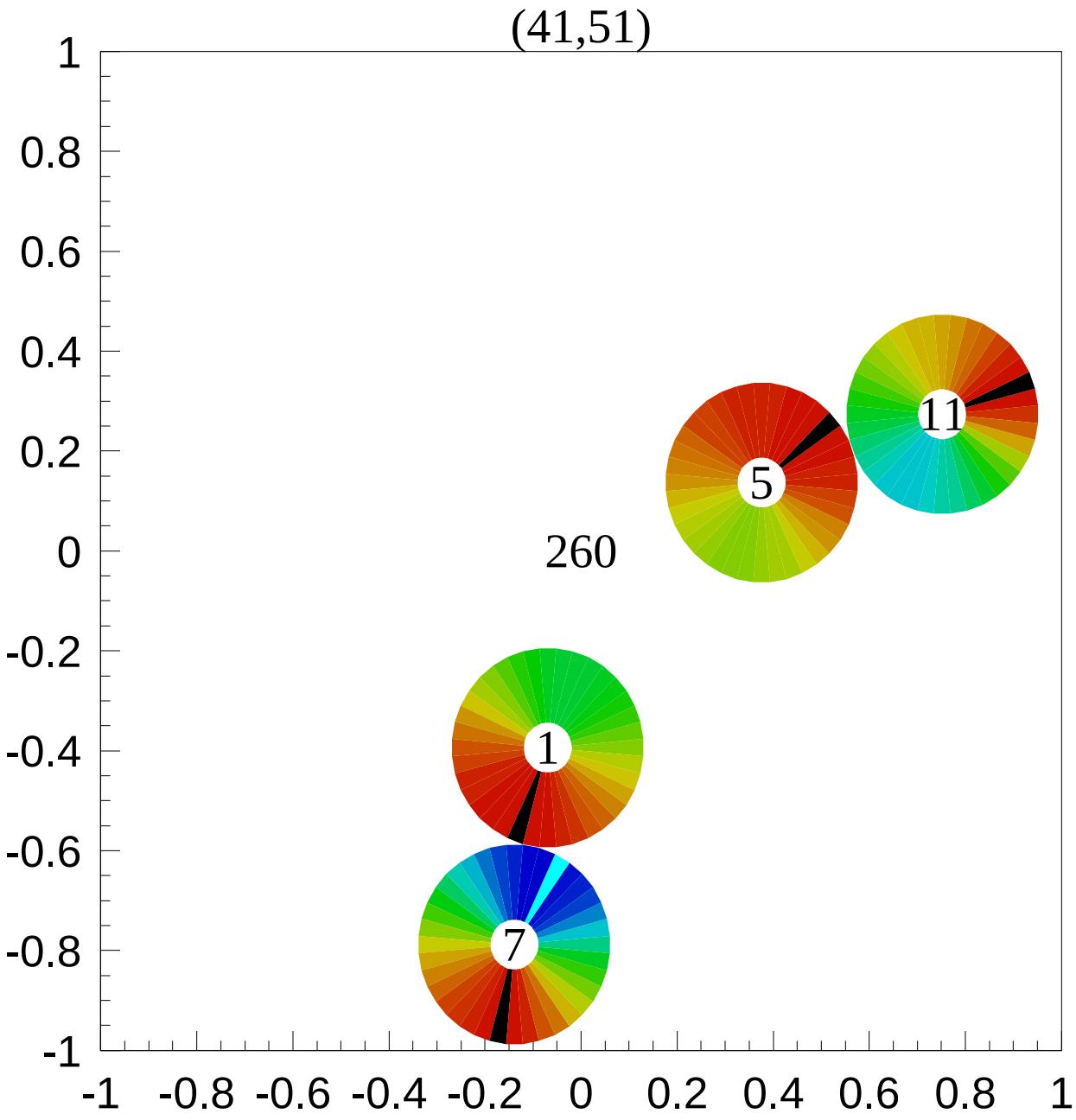

(41,27)
tilted LEDs
average of 6
average of 12
Ilh
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

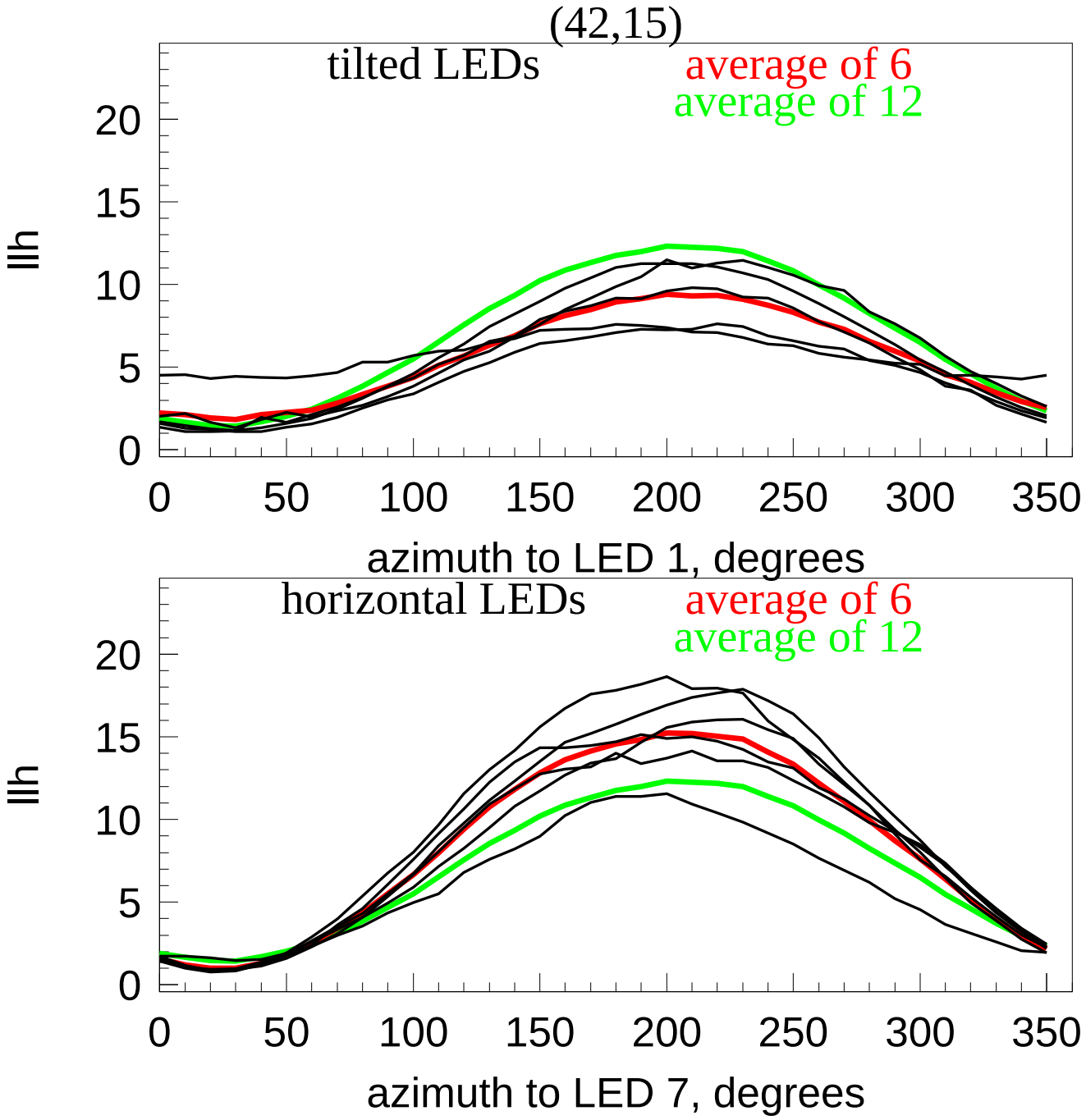

(41,27)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
8
12
2
6
100
3
5
9
4
11
10

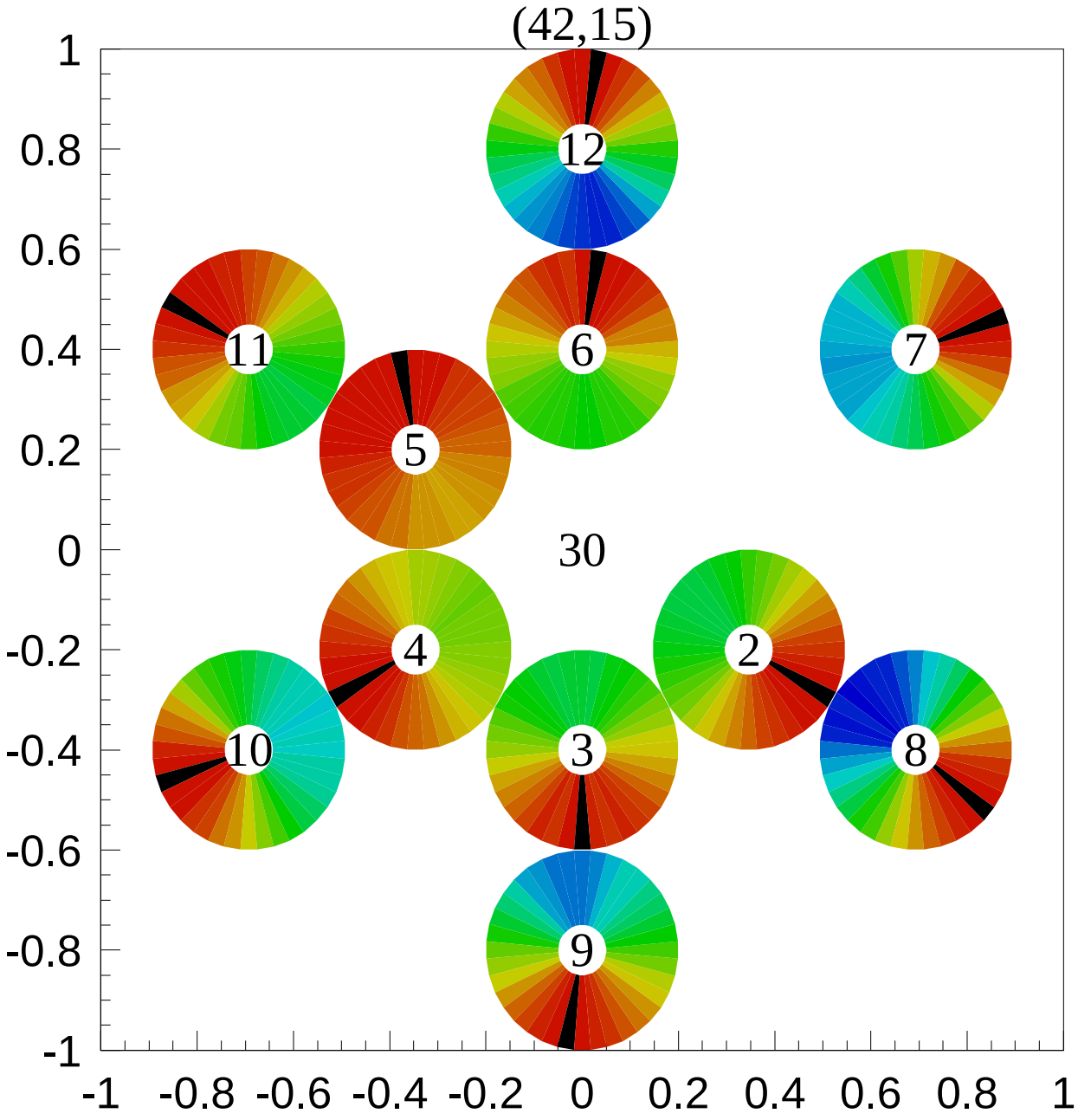

(41,47)
tilted LEDs
average of 6
average of 12
12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

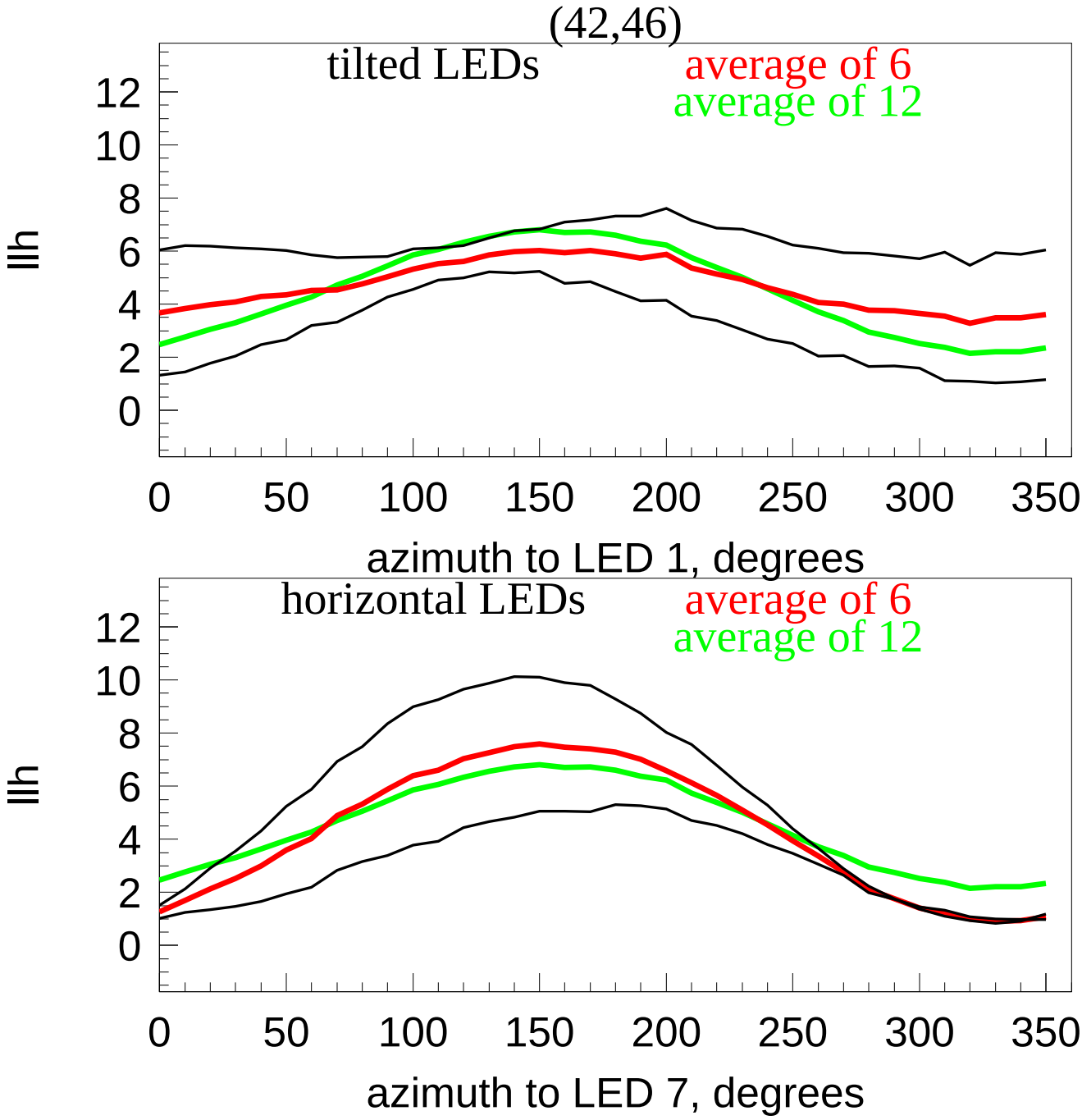

(41,47)
12
1
2
70
3
4
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

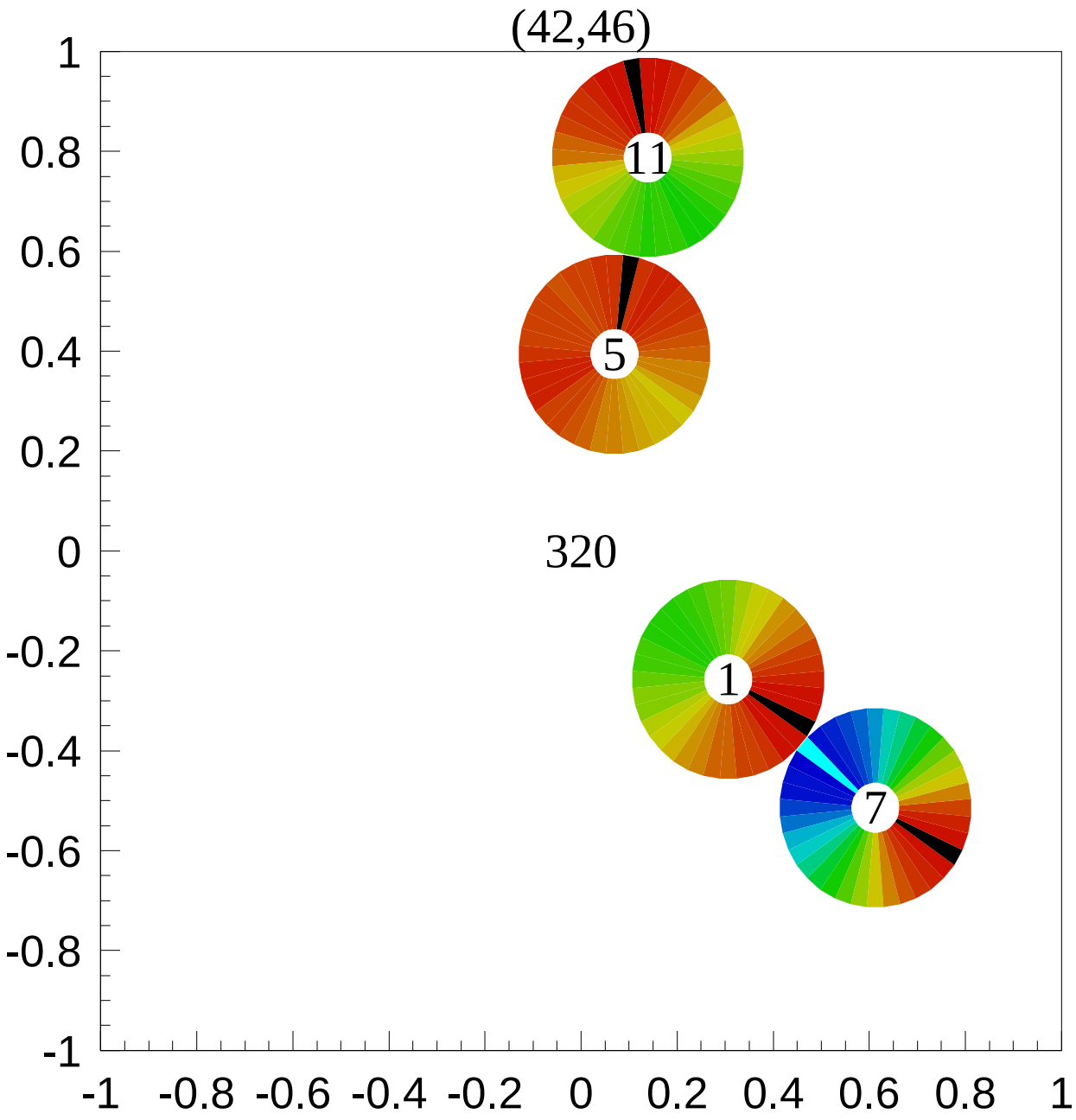

(41,51)
tilted LEDs
average of 6
average of 12
llh
45
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

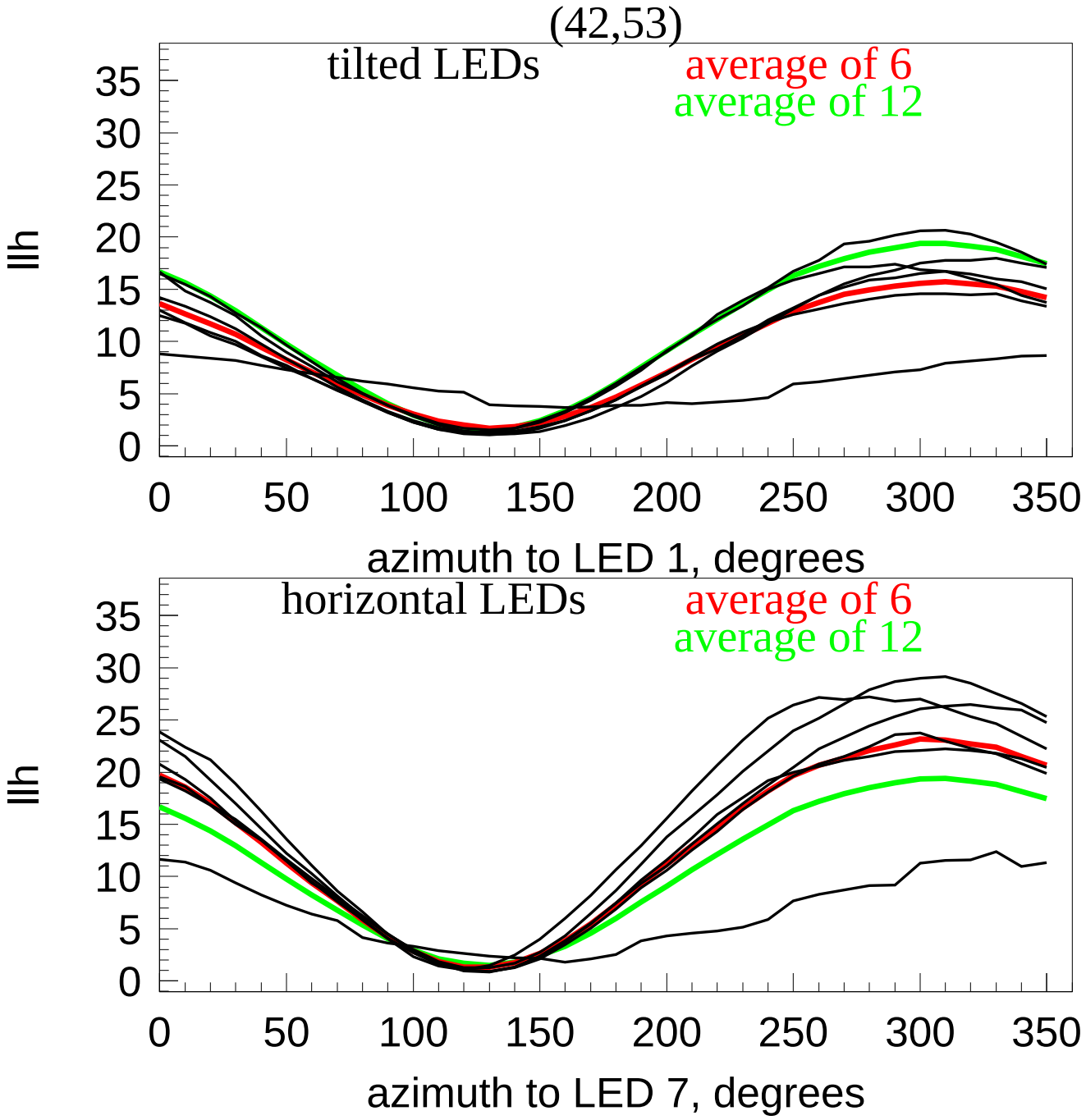

(41,51)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
260
1
7

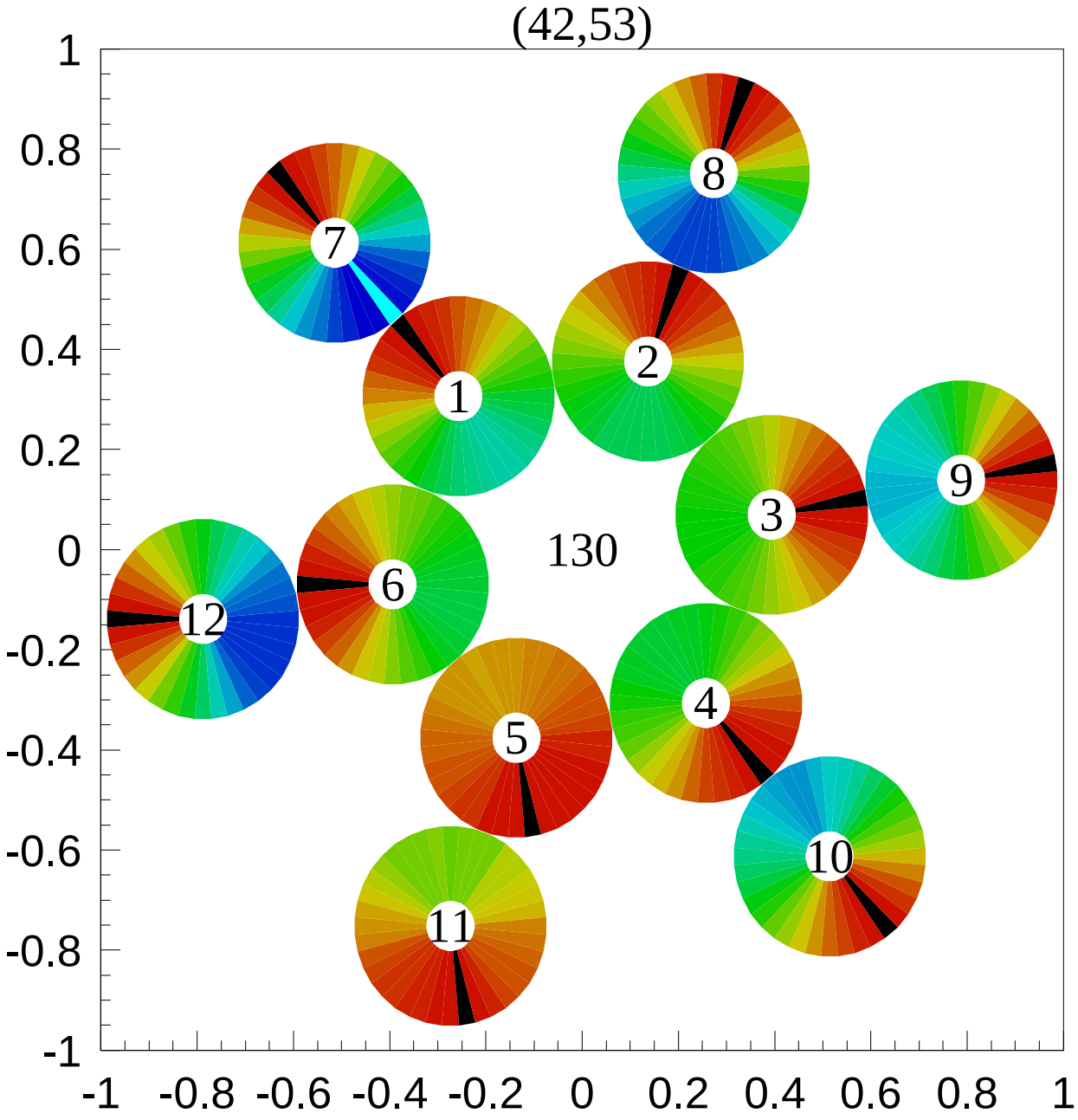

(42,15)
tilted LEDs
average of 6
average of 12
llh
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

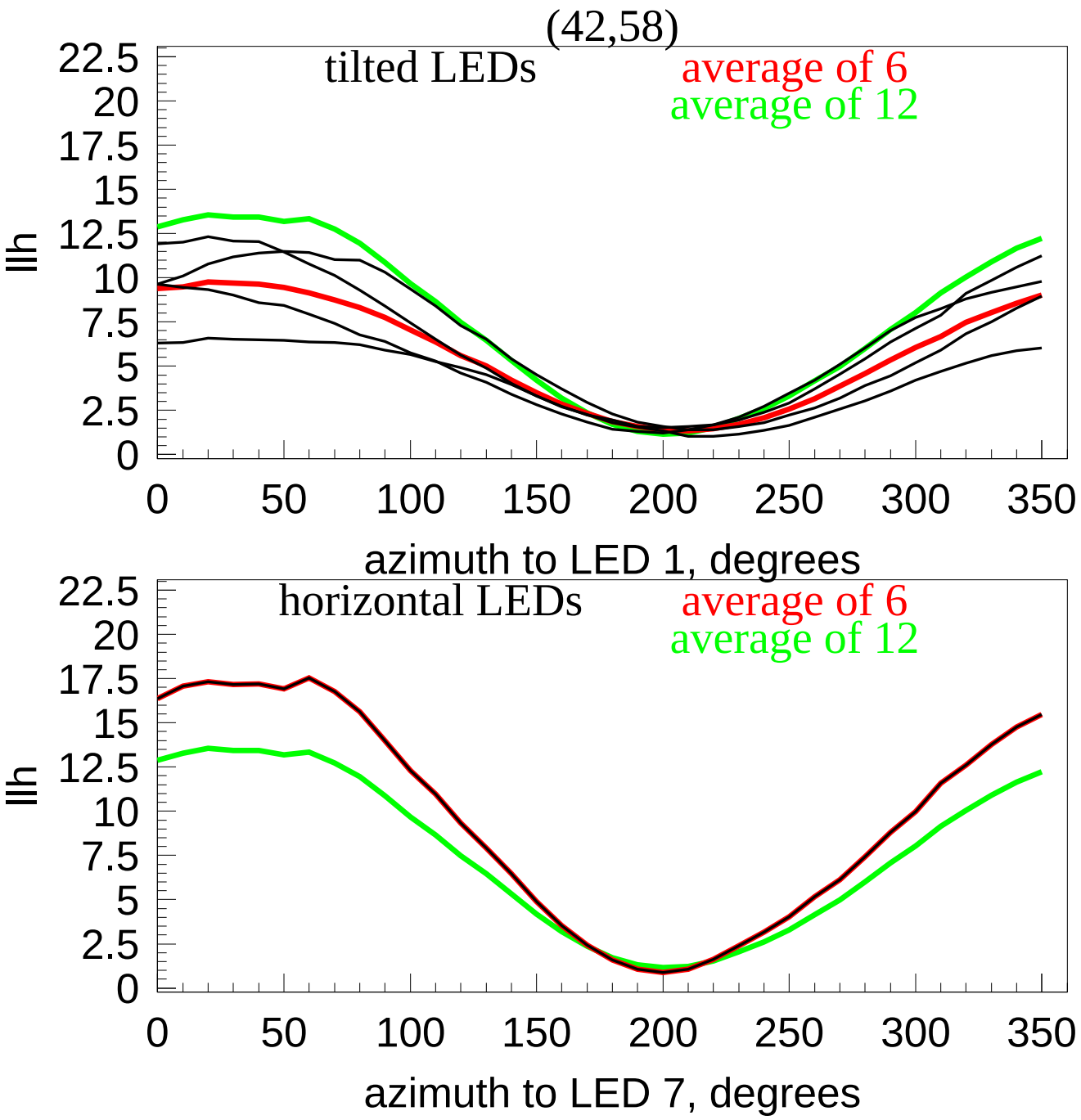

(42,15)
12
11
6
7
5
30
4
2
10
3
8
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

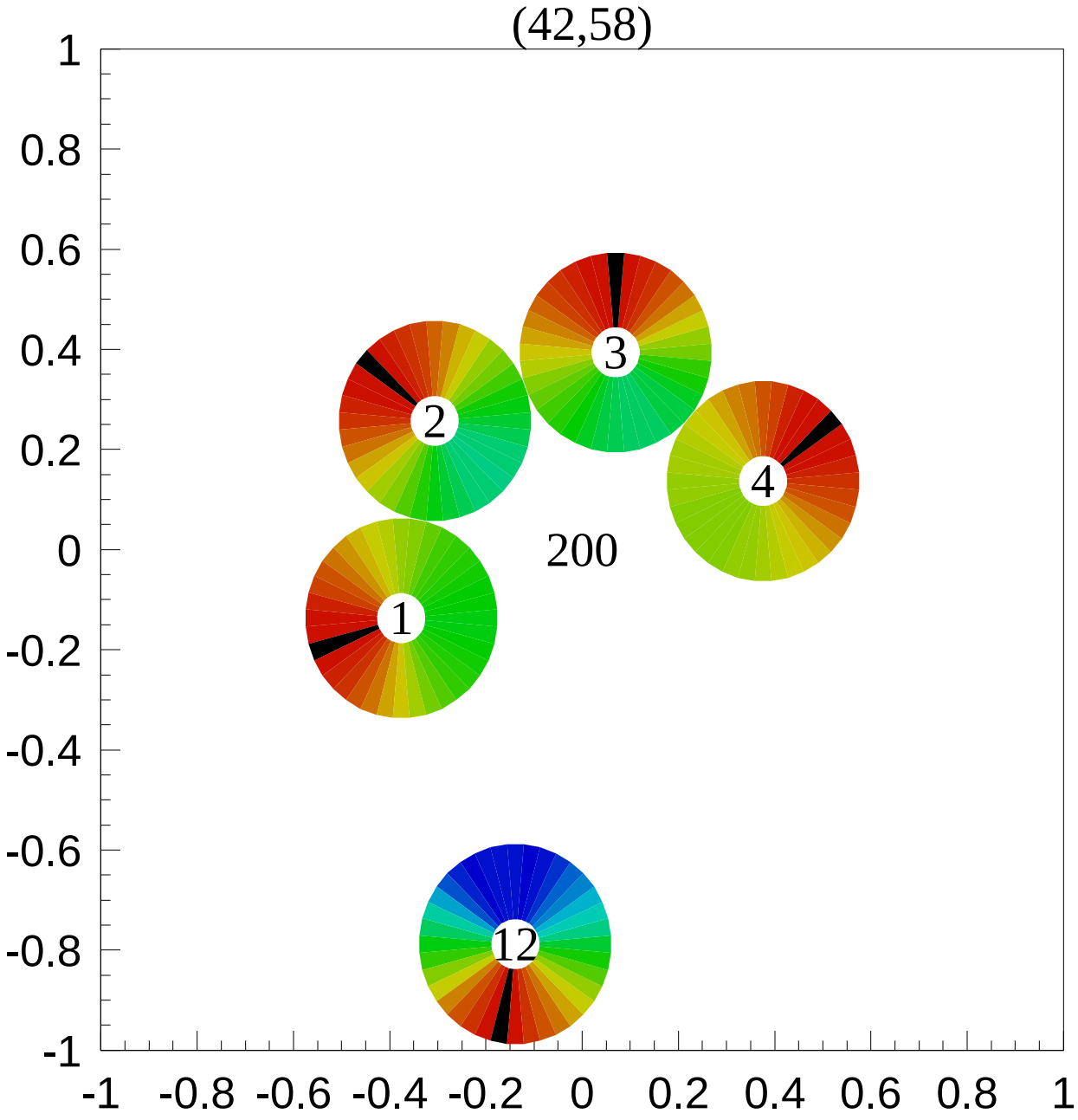

(42,46)
tilted LEDs
average of 6
average of 12
12
10
8
6
4
2
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
12
10
8
6
4
2
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

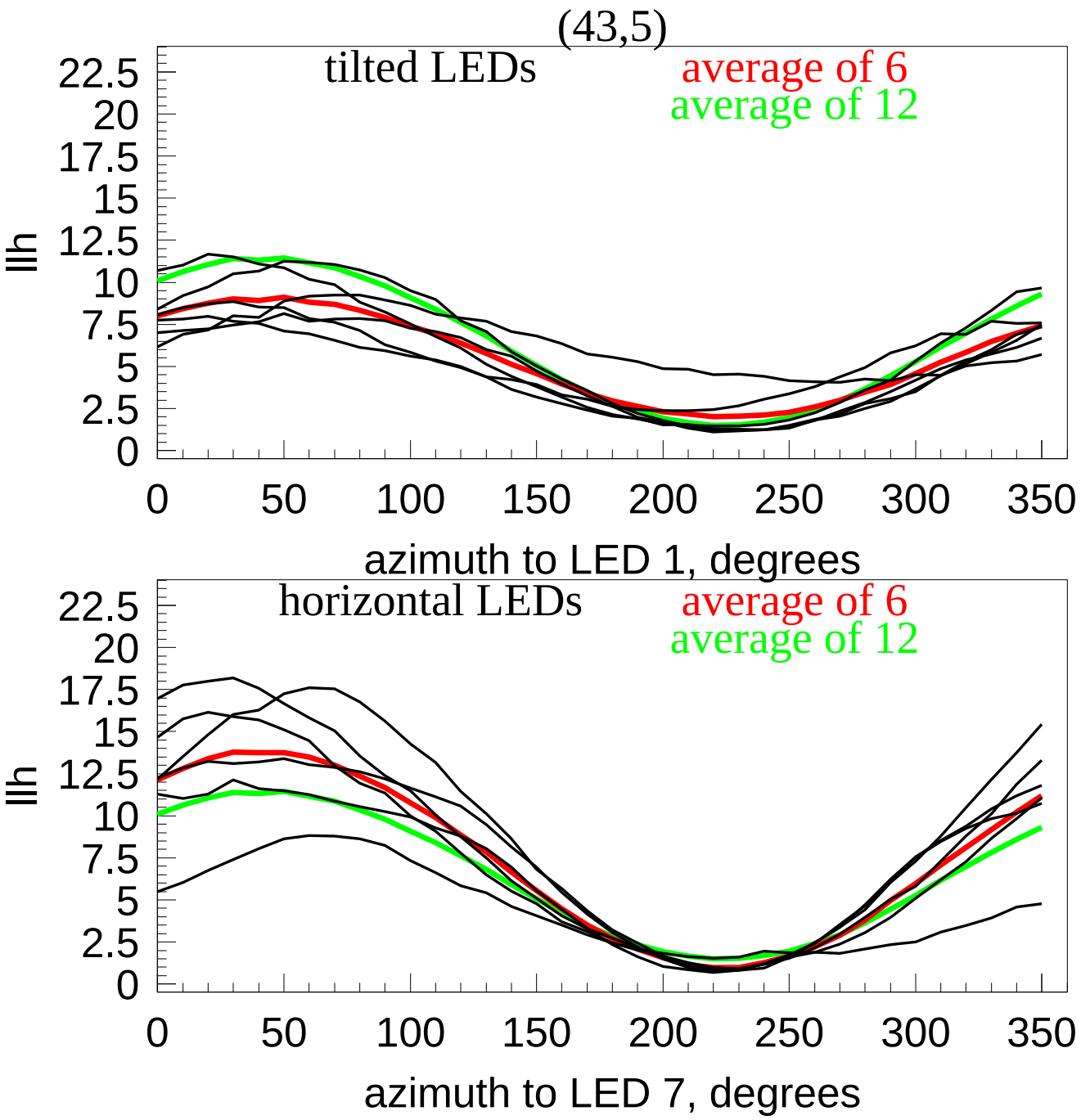

(42,46)
11
5
320
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

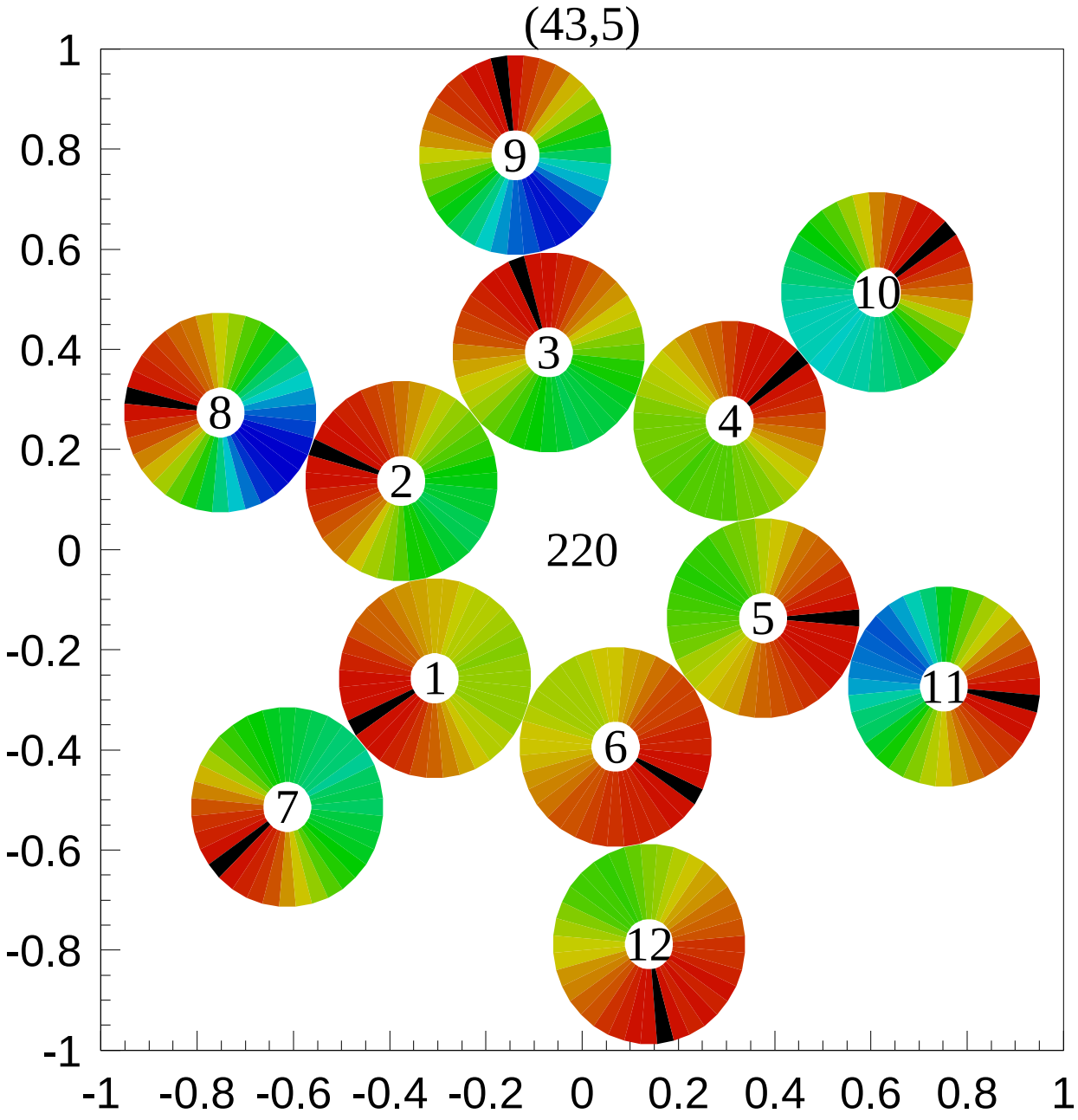

(42,53)
tilted LEDs
average of 6
average of 12
Ilh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

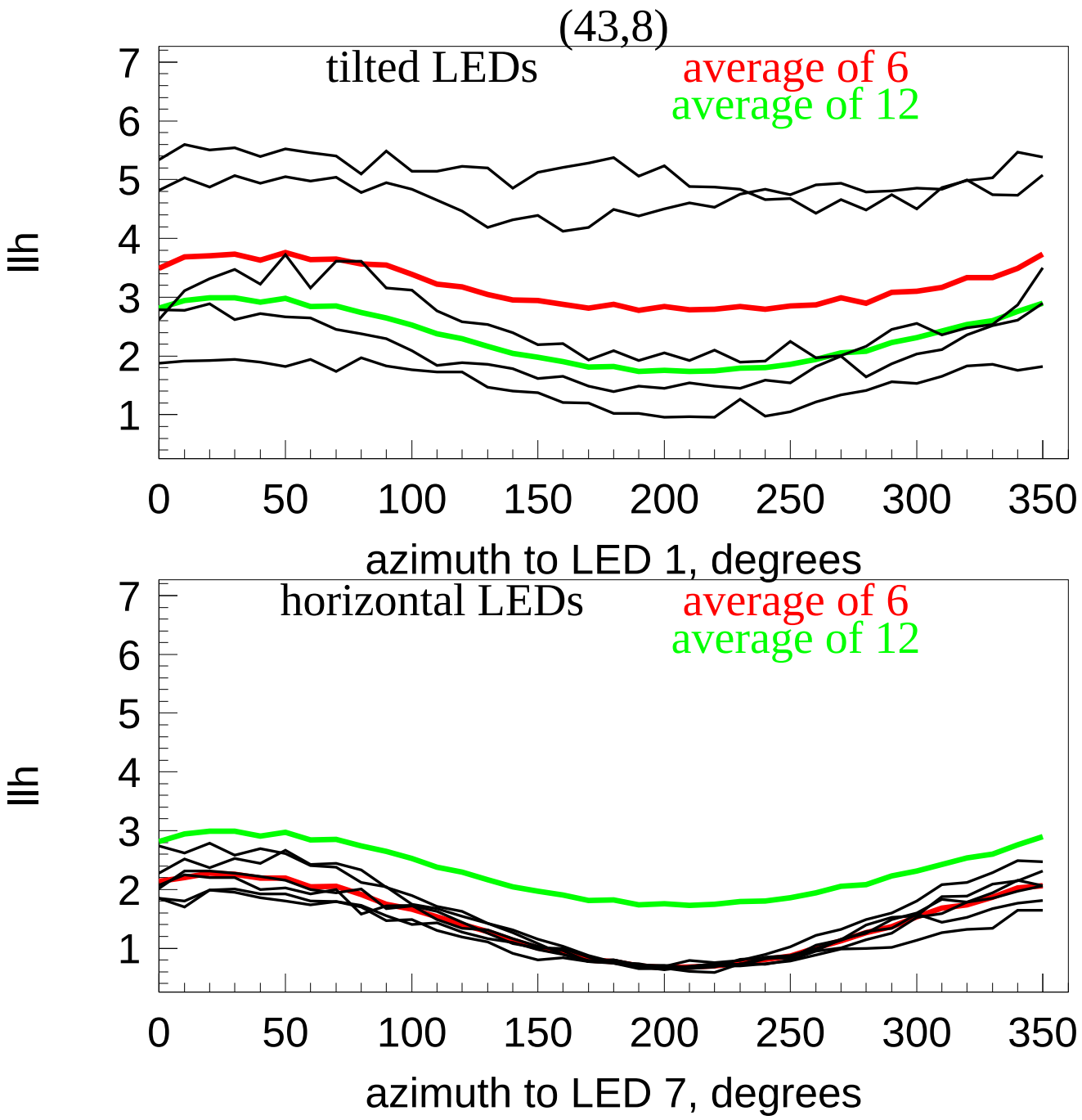

(42,53)
130
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

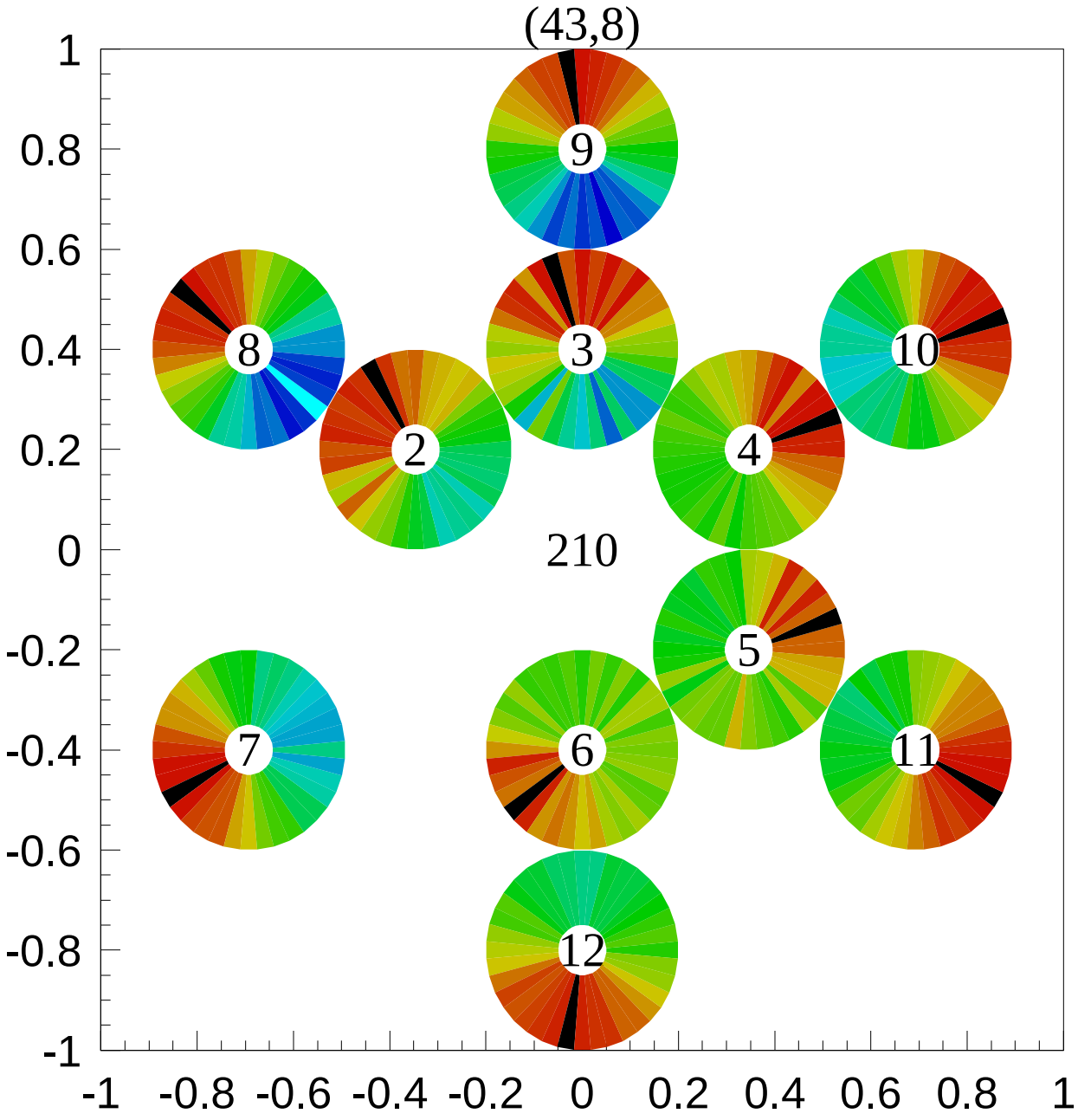

(42,58)
tilted LEDs
average of 6
average of 12
Ilh
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

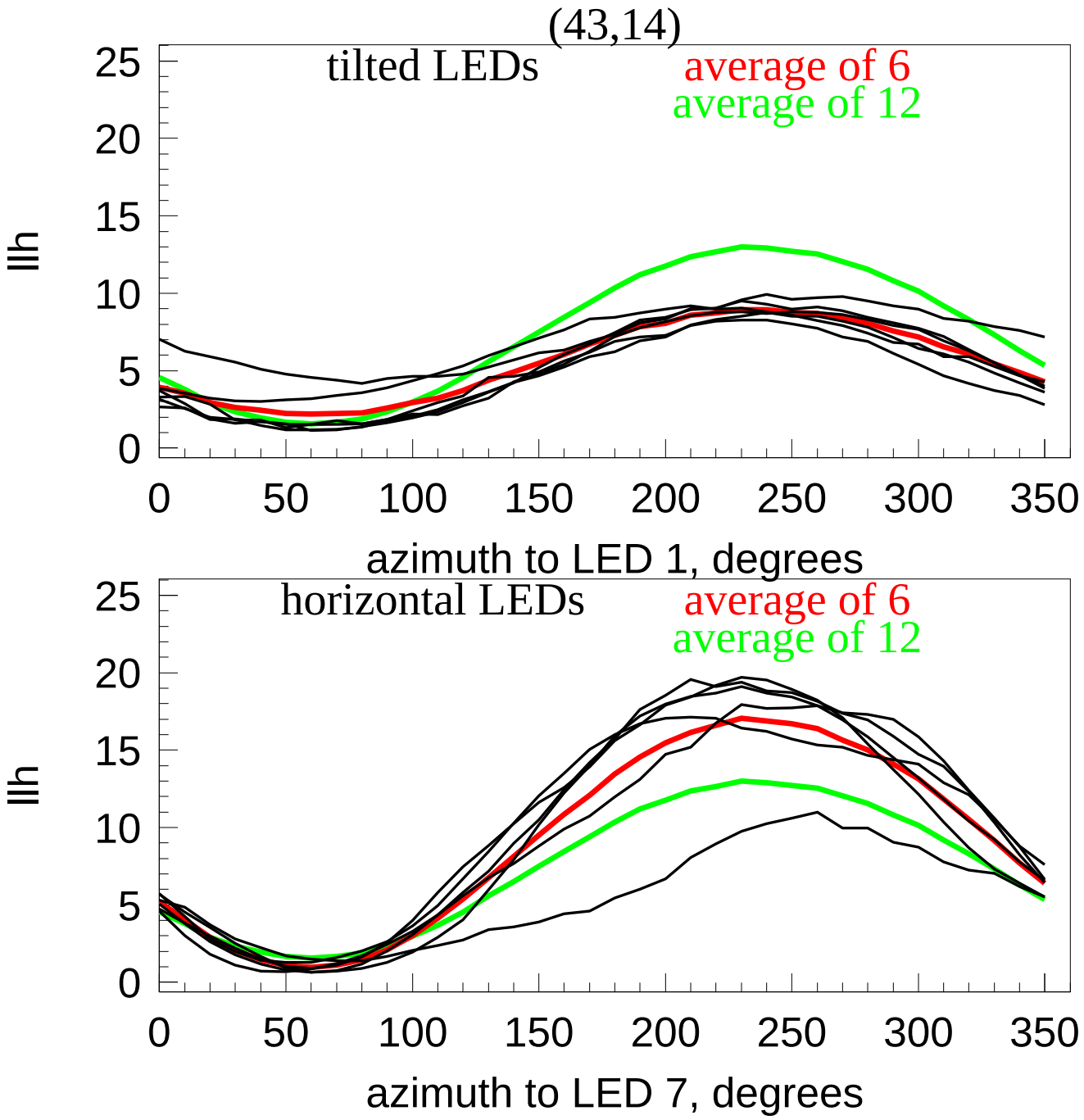

(42,58)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
2
3
4
200
1
12

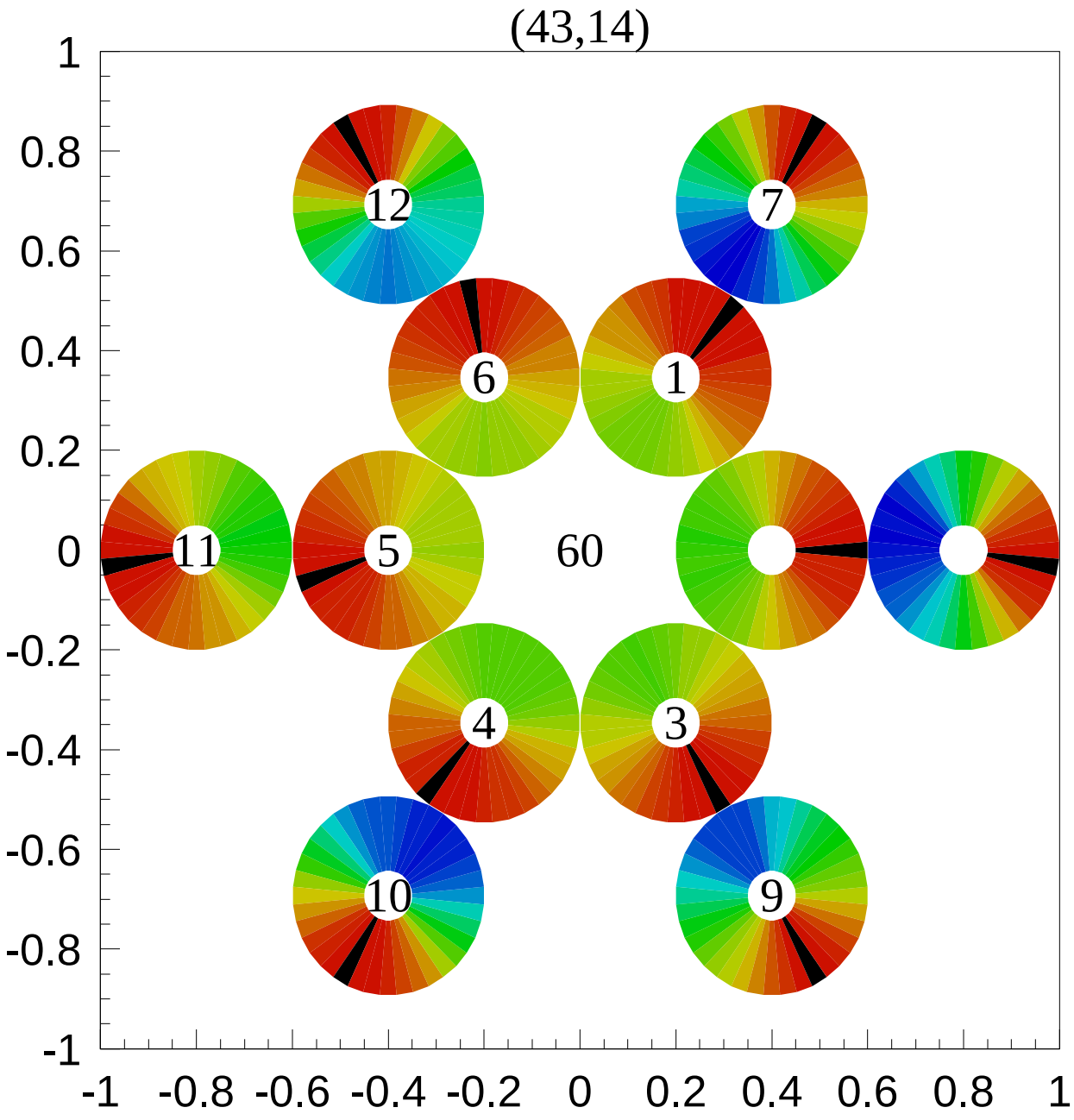

(43,5)
tilted LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

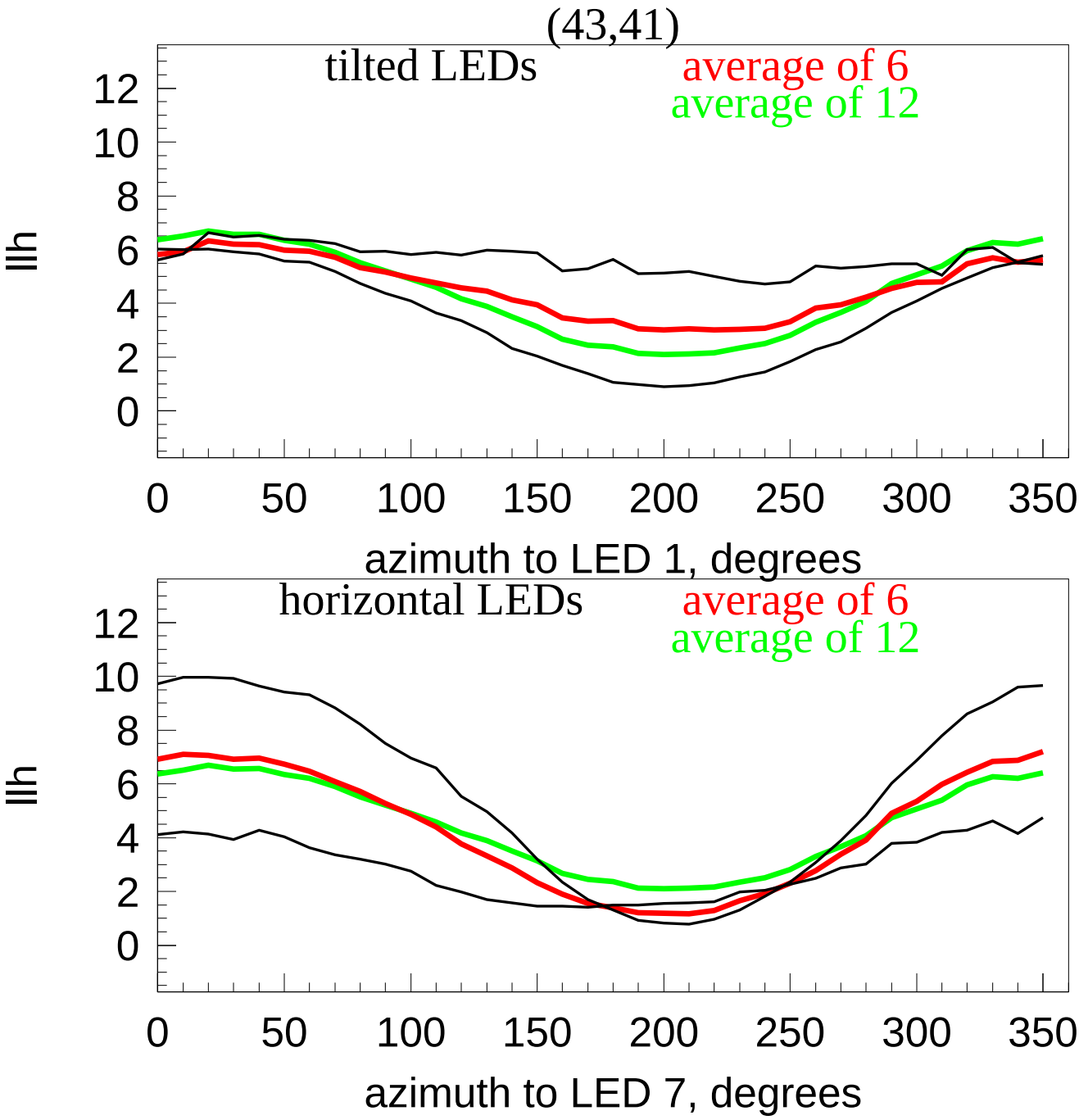

(43,5)
220
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

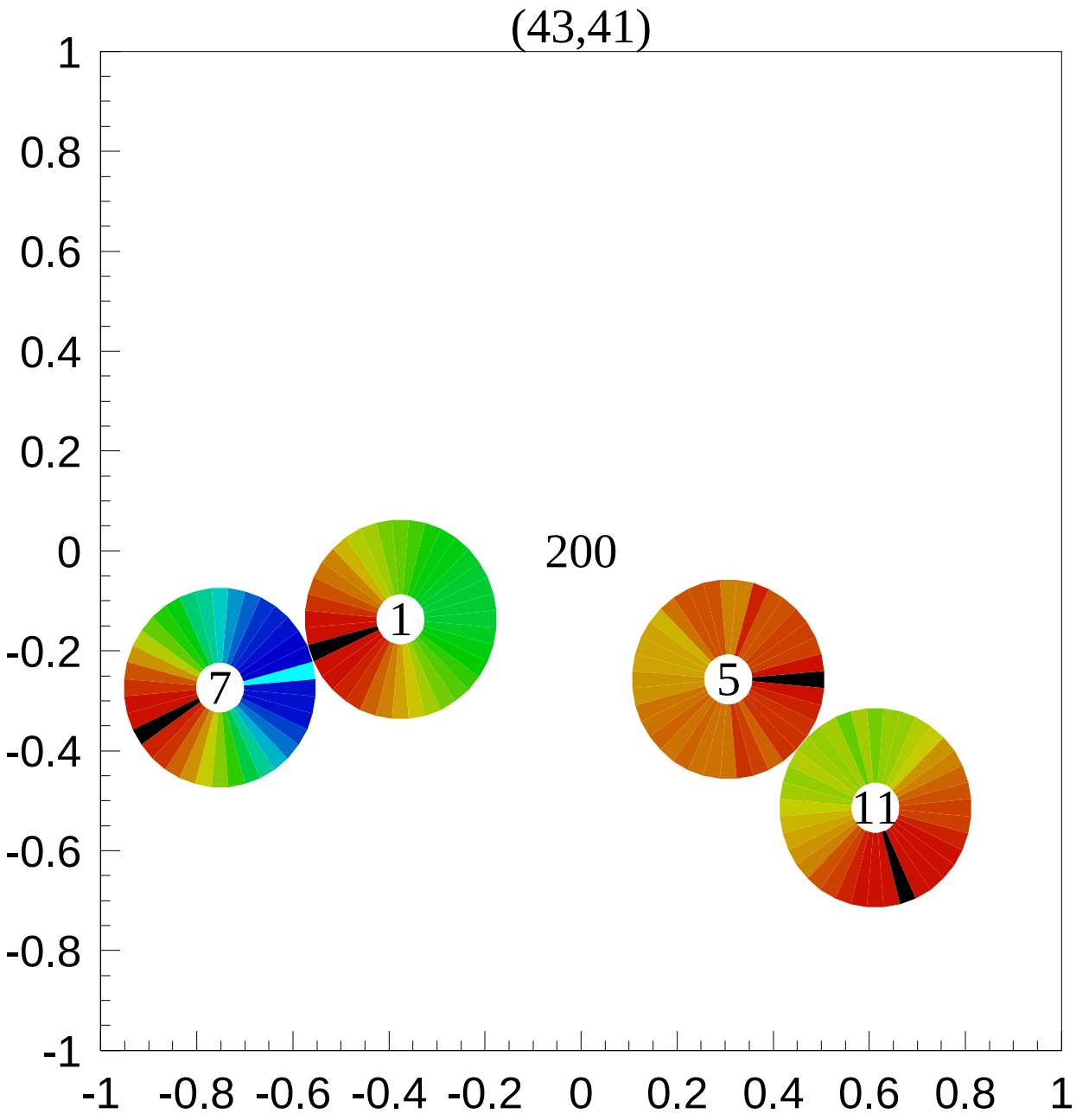

(43,8)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

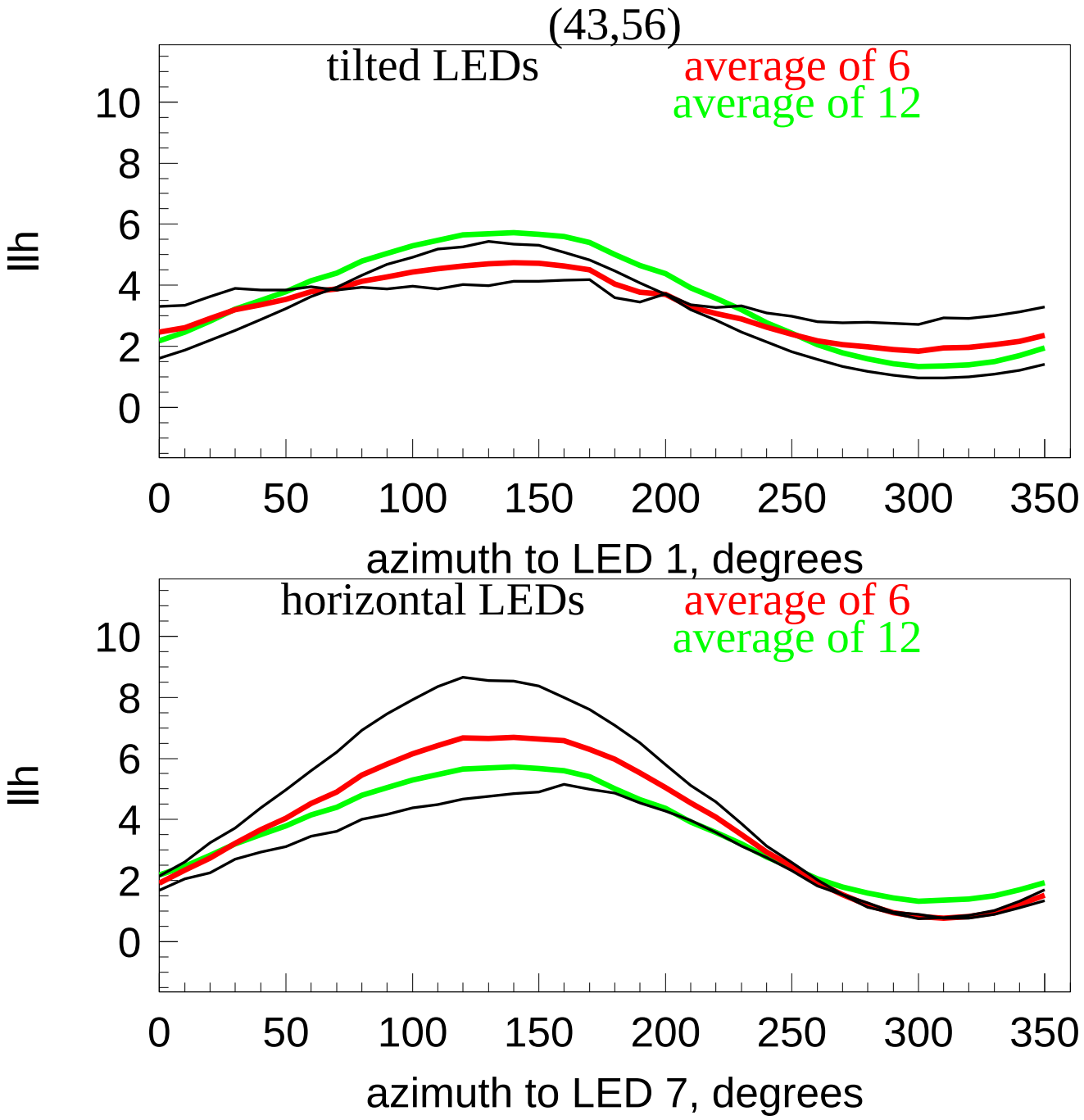

(43,8)
9
8
3
10
2
4
210
5
7
6
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

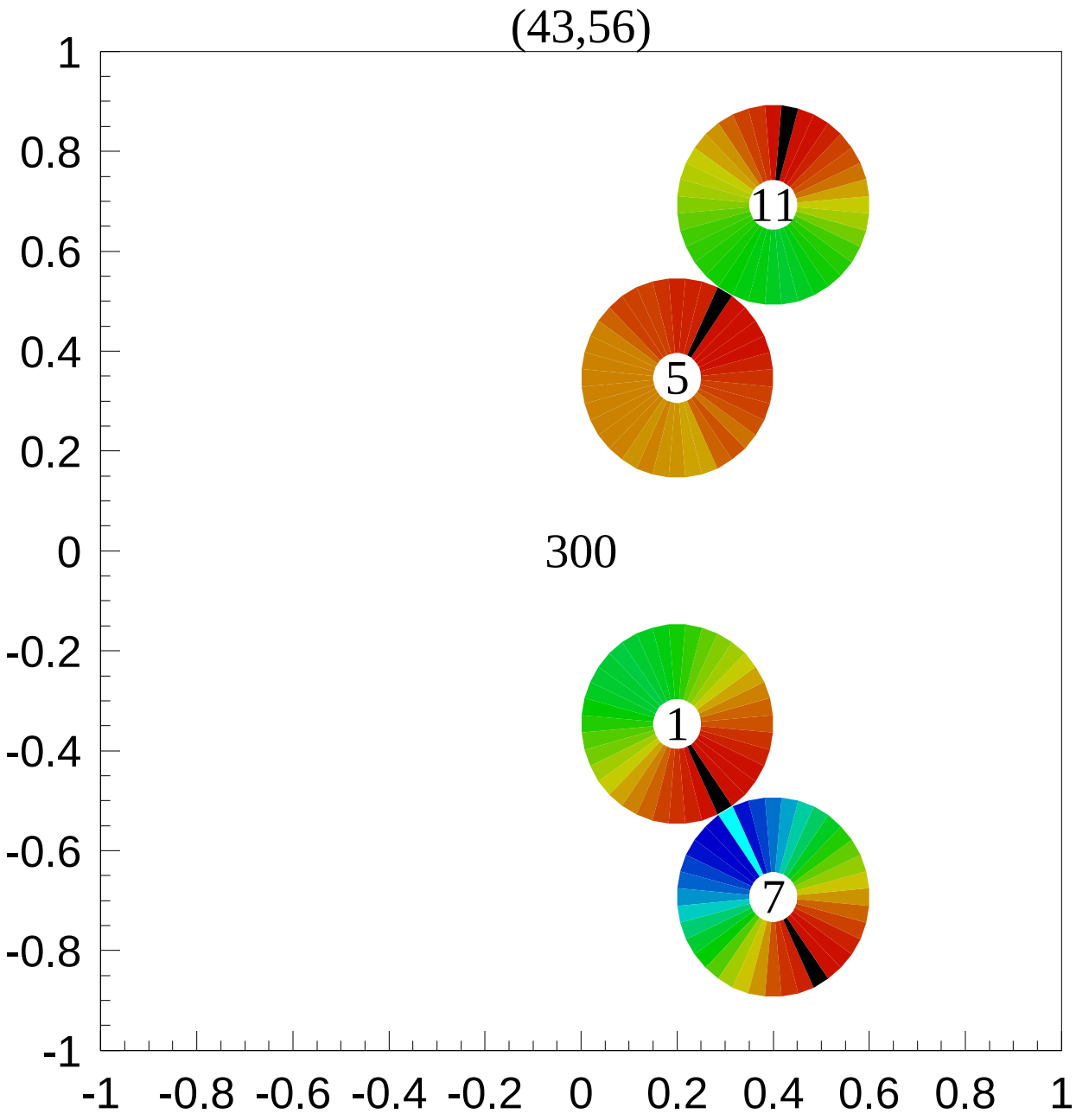

(43,14)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

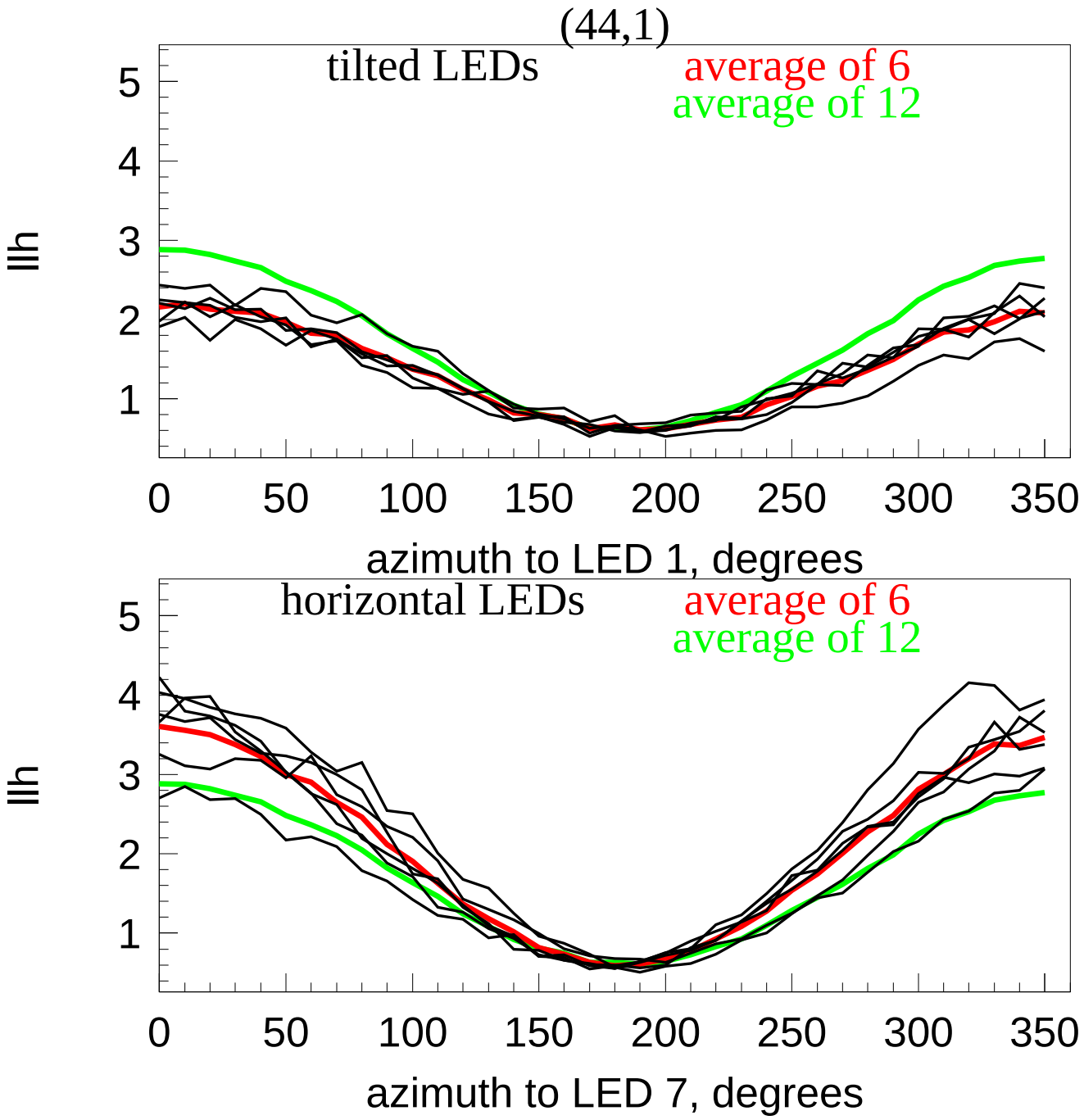

(43,14)
12
7
6
1
11
5
60
4
3
10
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

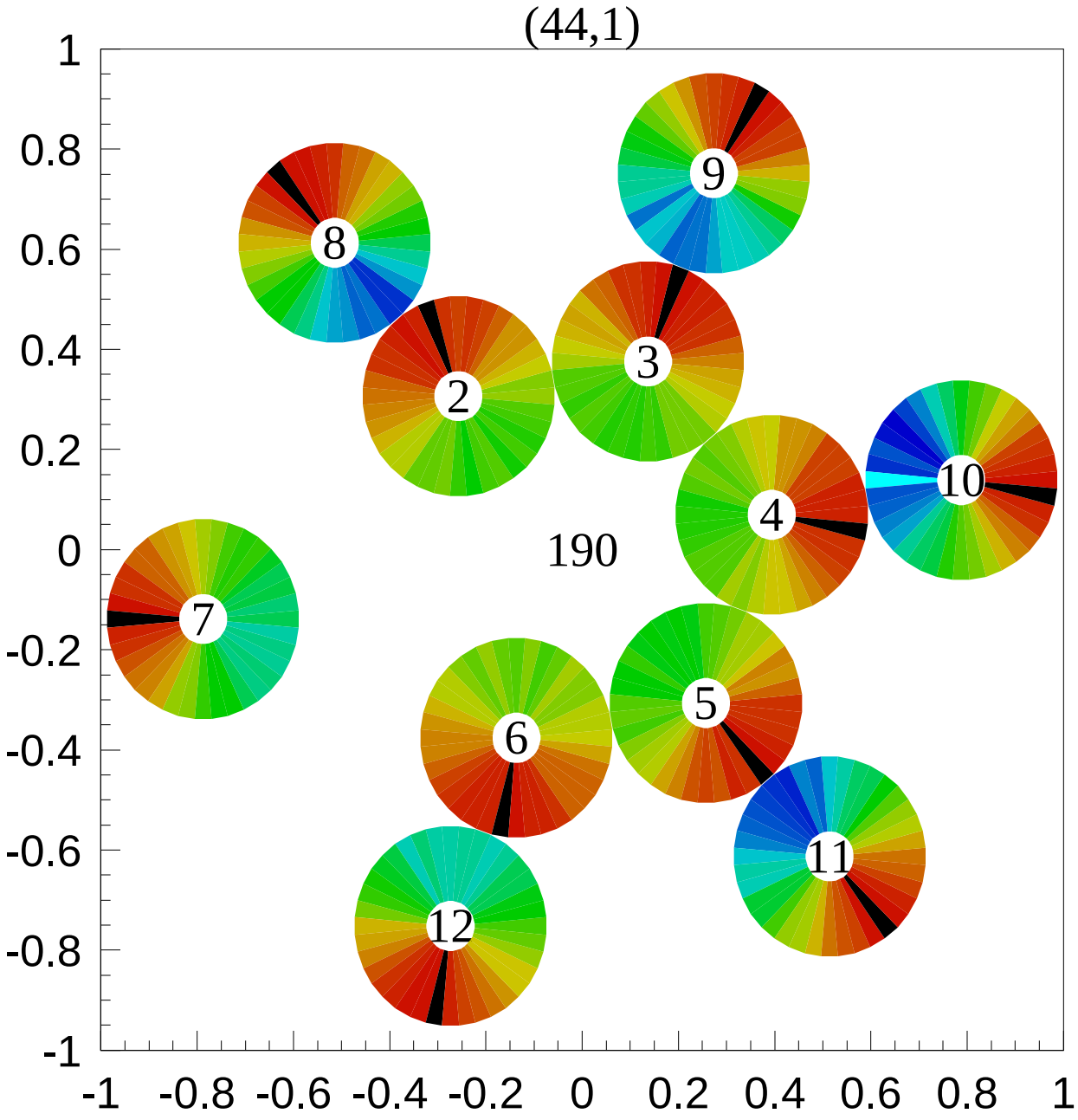

(43,41)
tilted LEDs
average of 6
average of 12
12
10
8
6
4
2
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
12
10
8
6
4
2
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

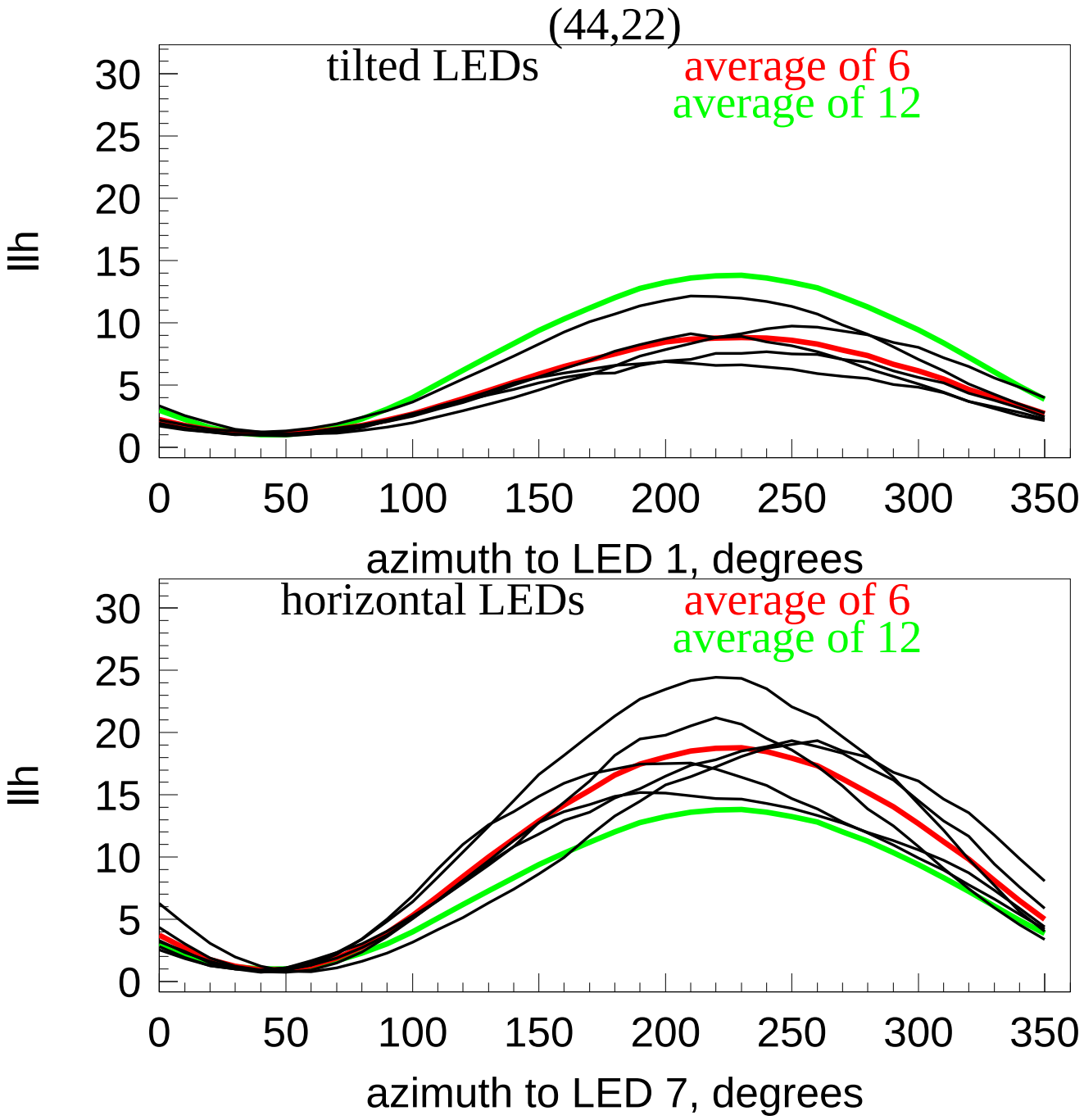

(43,41)
200
1
7
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

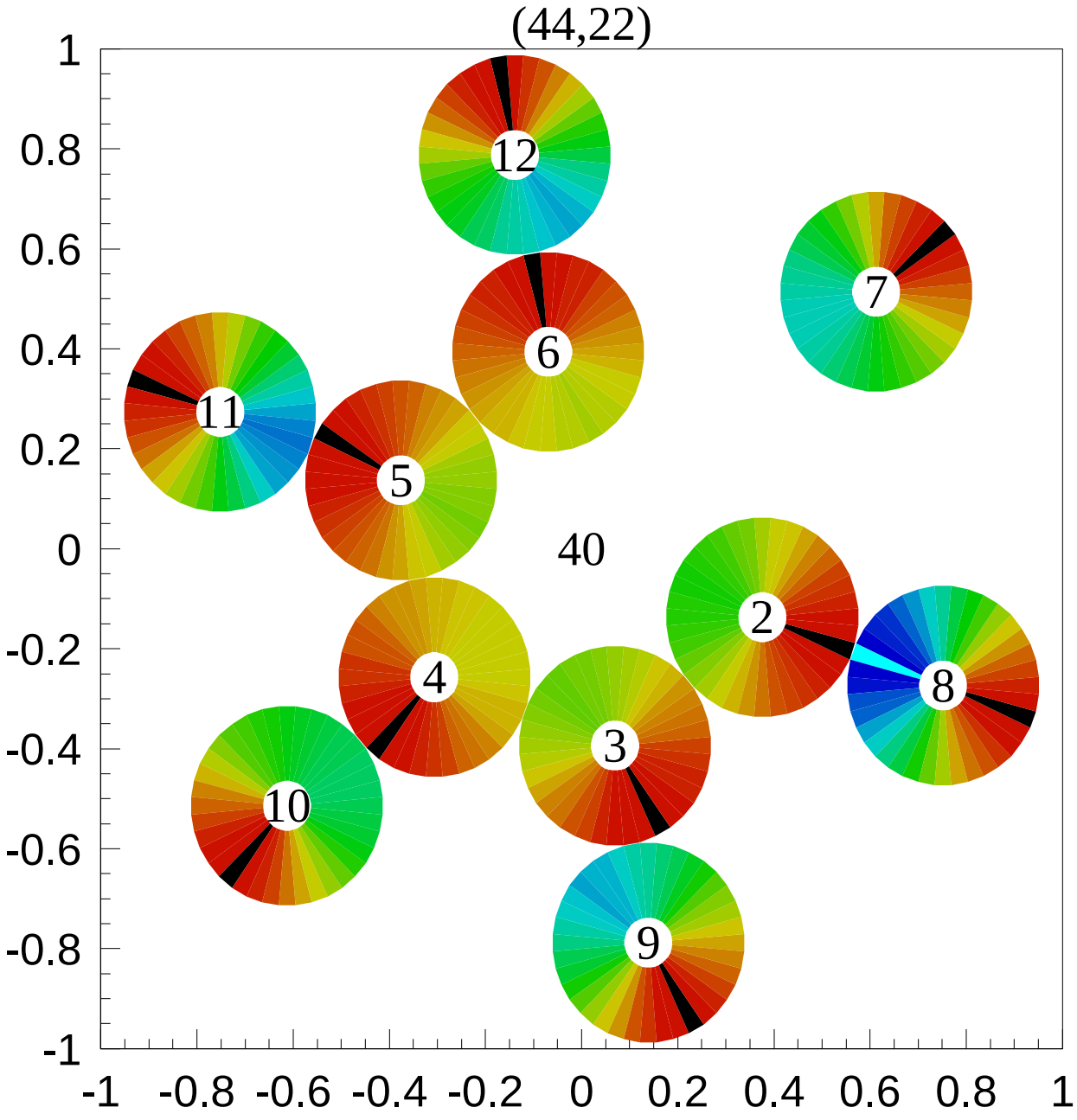

(43,56)
tilted LEDs
average of 6
average of 12
Ilh
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

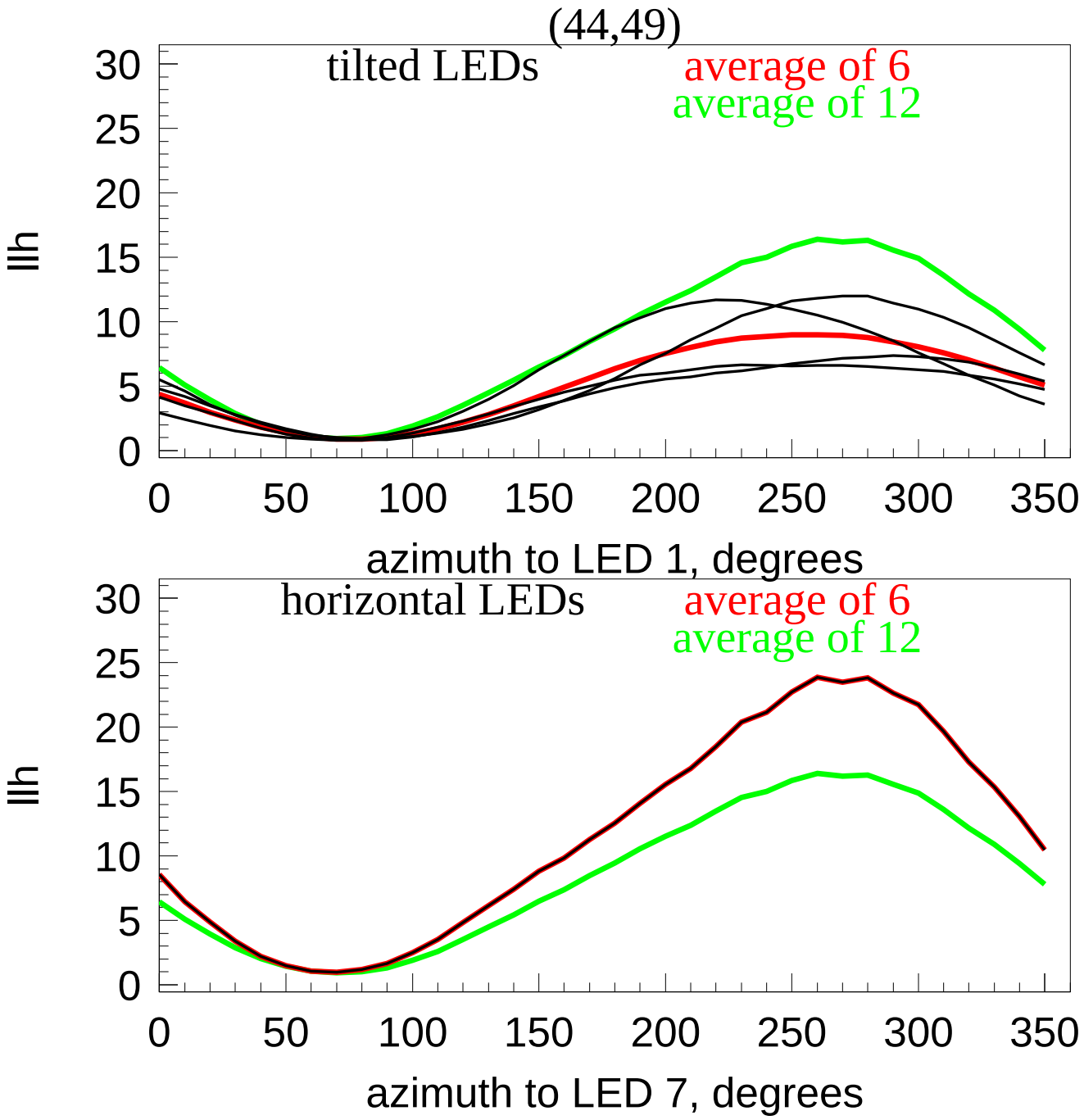

(43,56)
11
5
300
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

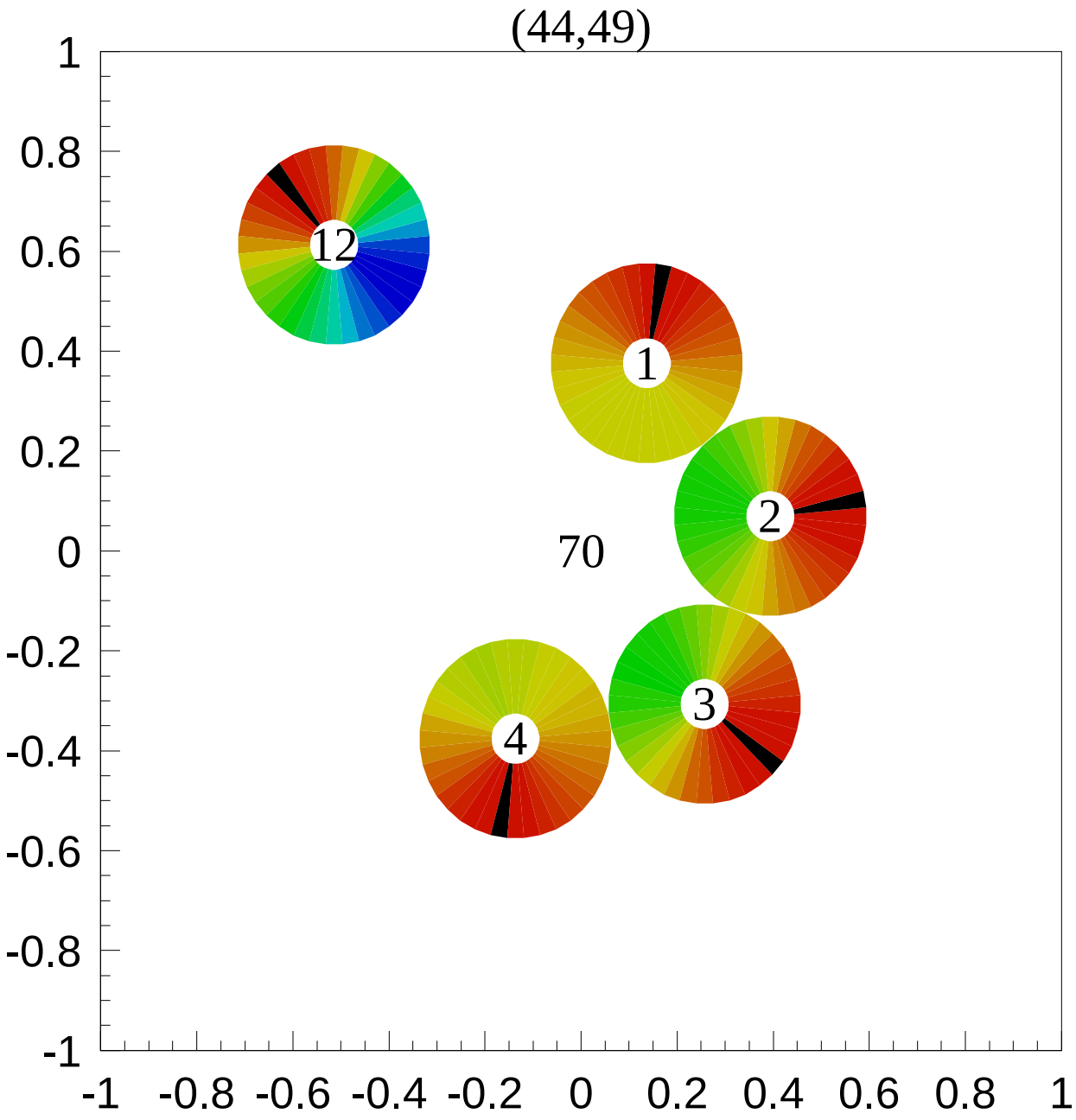

(44,1)
tilted LEDs
average of 6
average of 12
llh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

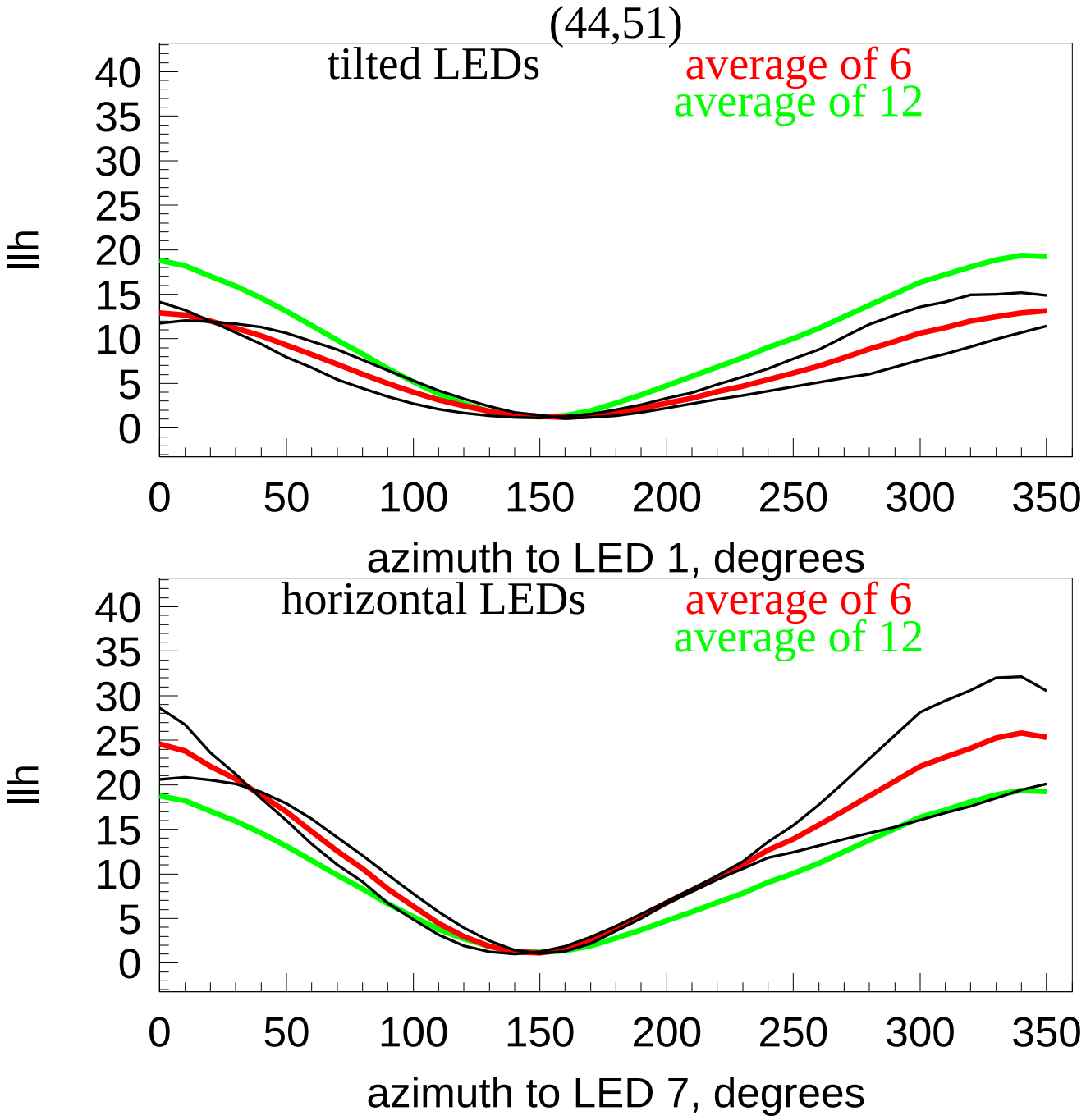

(44,1)
190
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

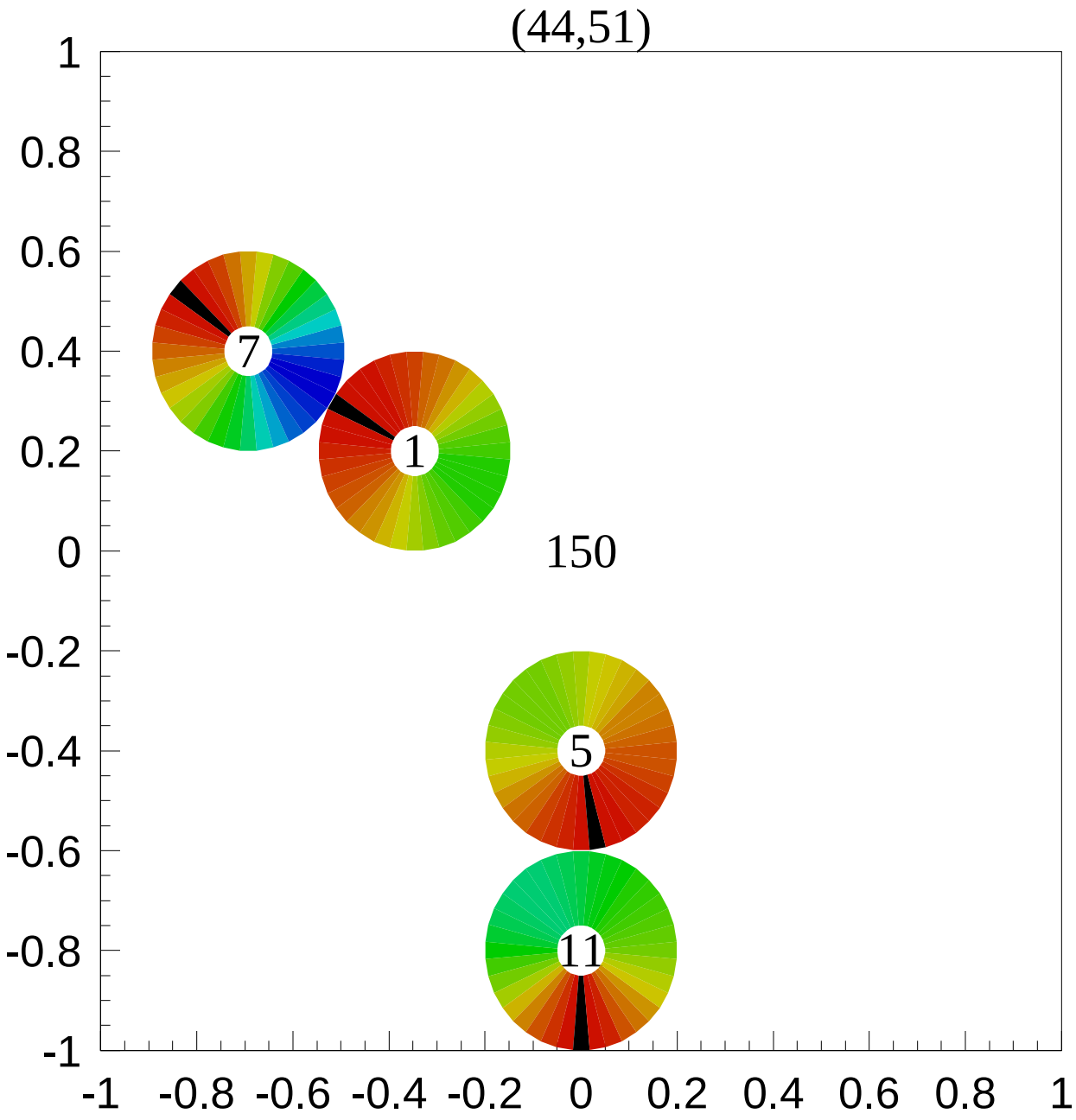

(44,22)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

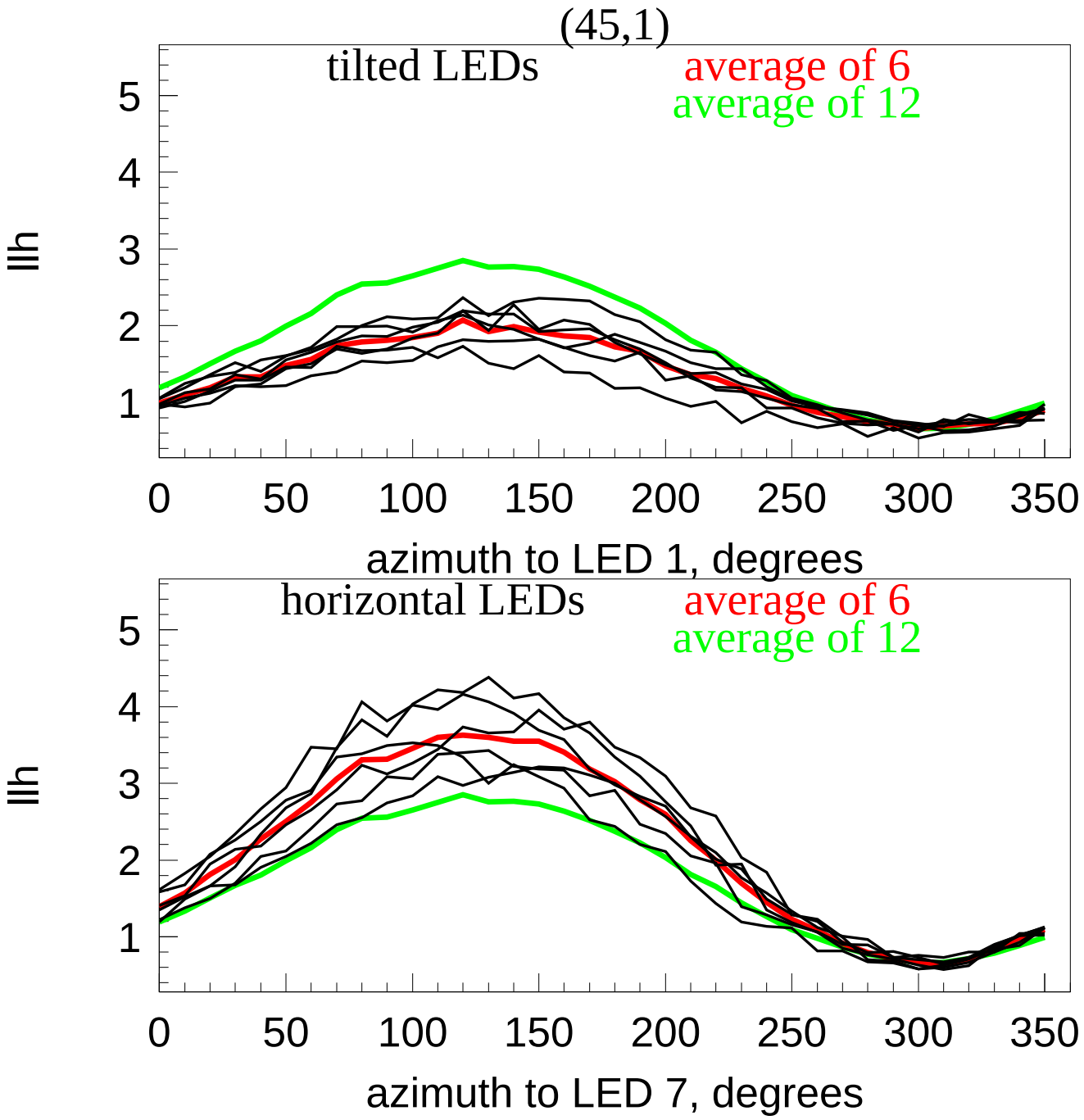

(44,22)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
7
6
11
5
40
2
8
4
3
10
9

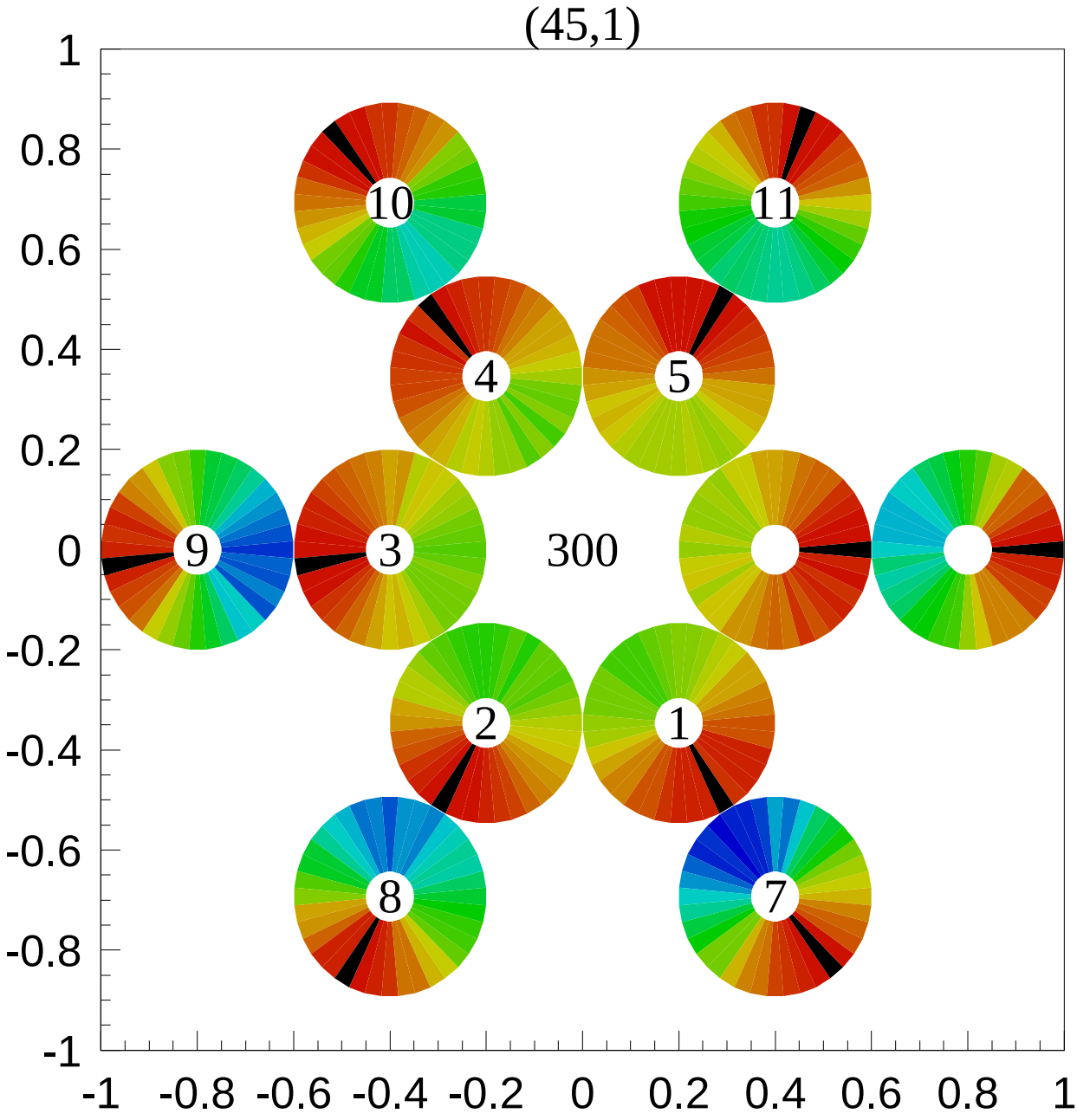

(44,49)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

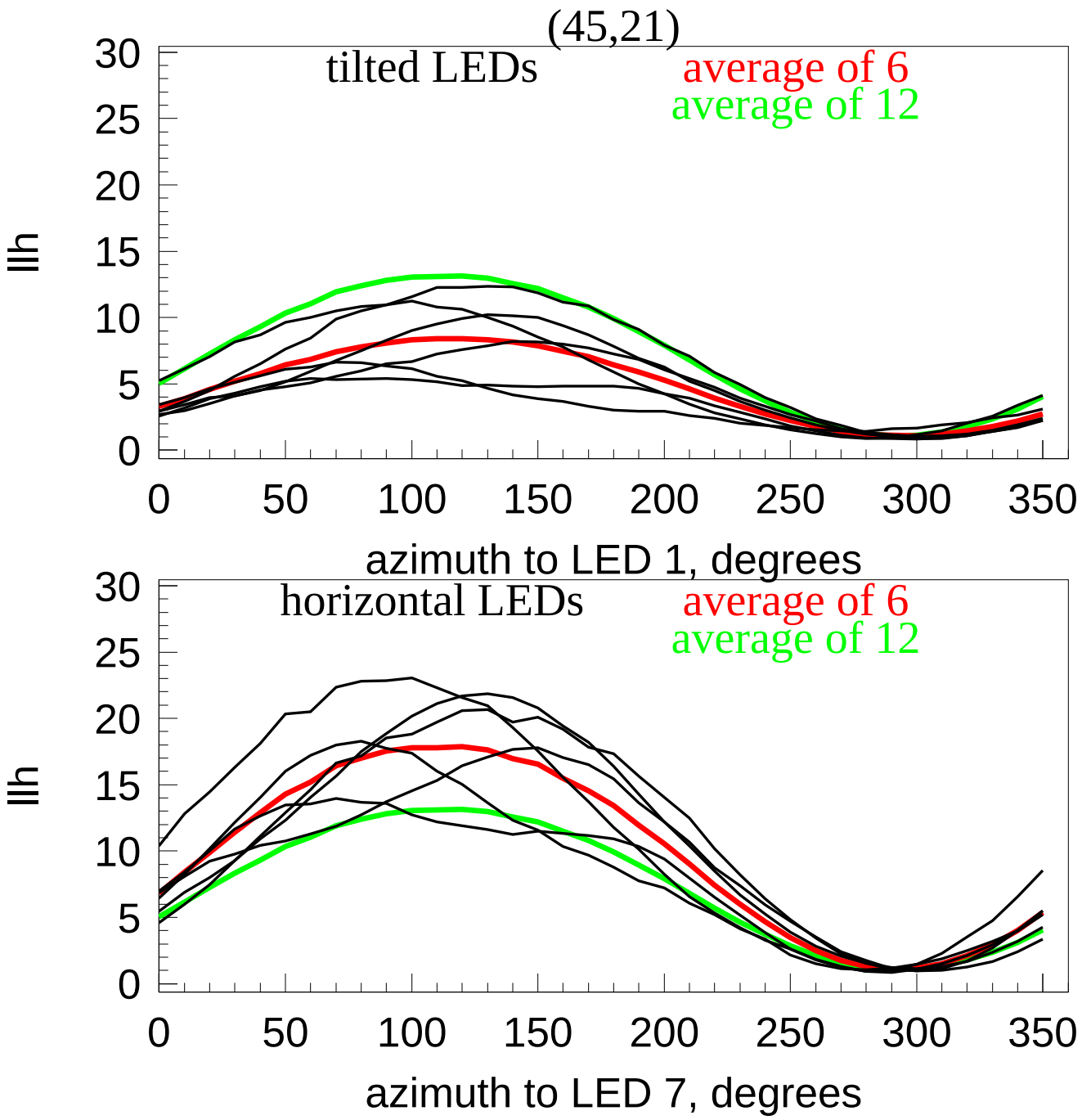

(44,49)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
1
2
70
3
4

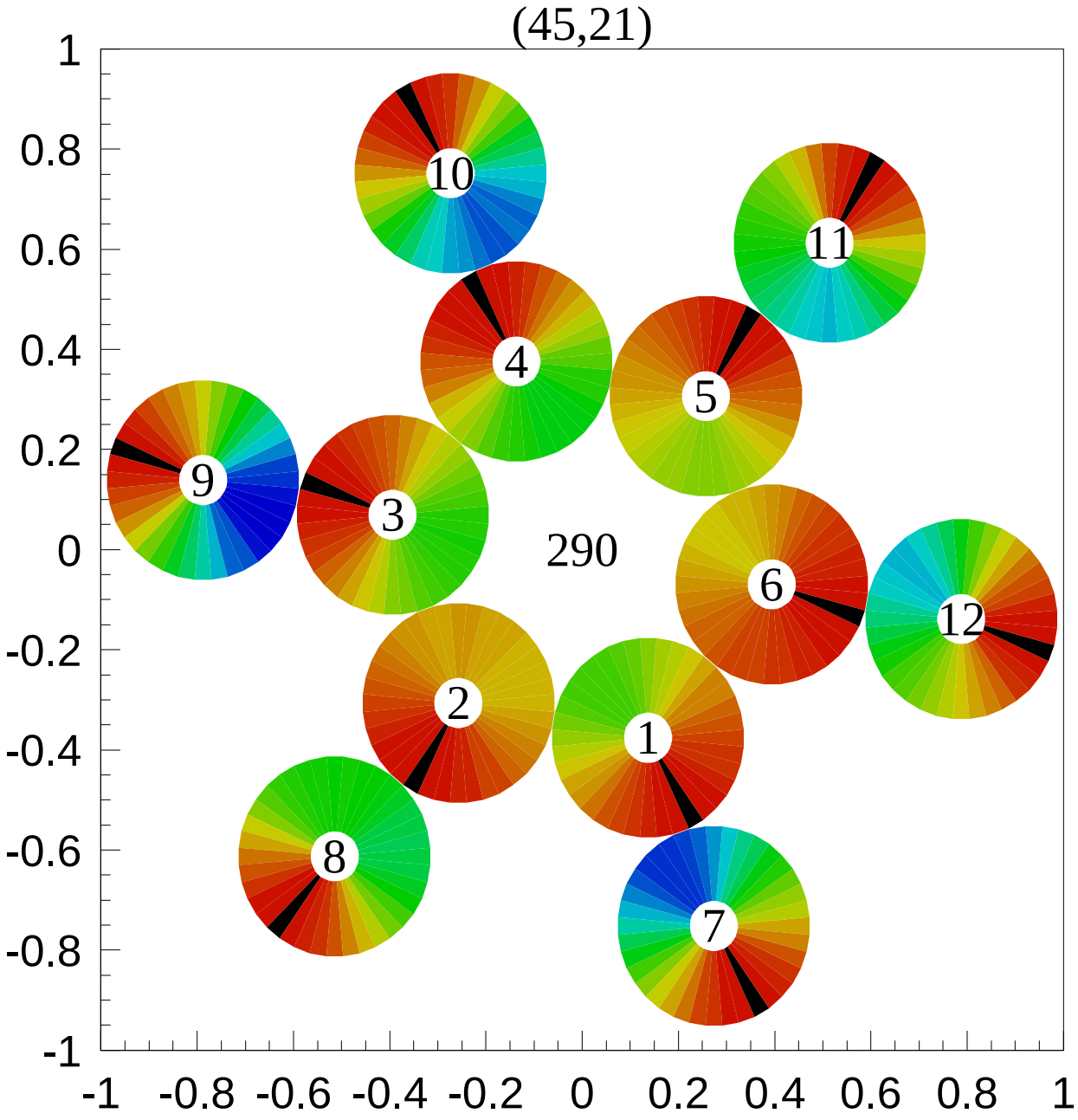

(44,51)
tilted LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

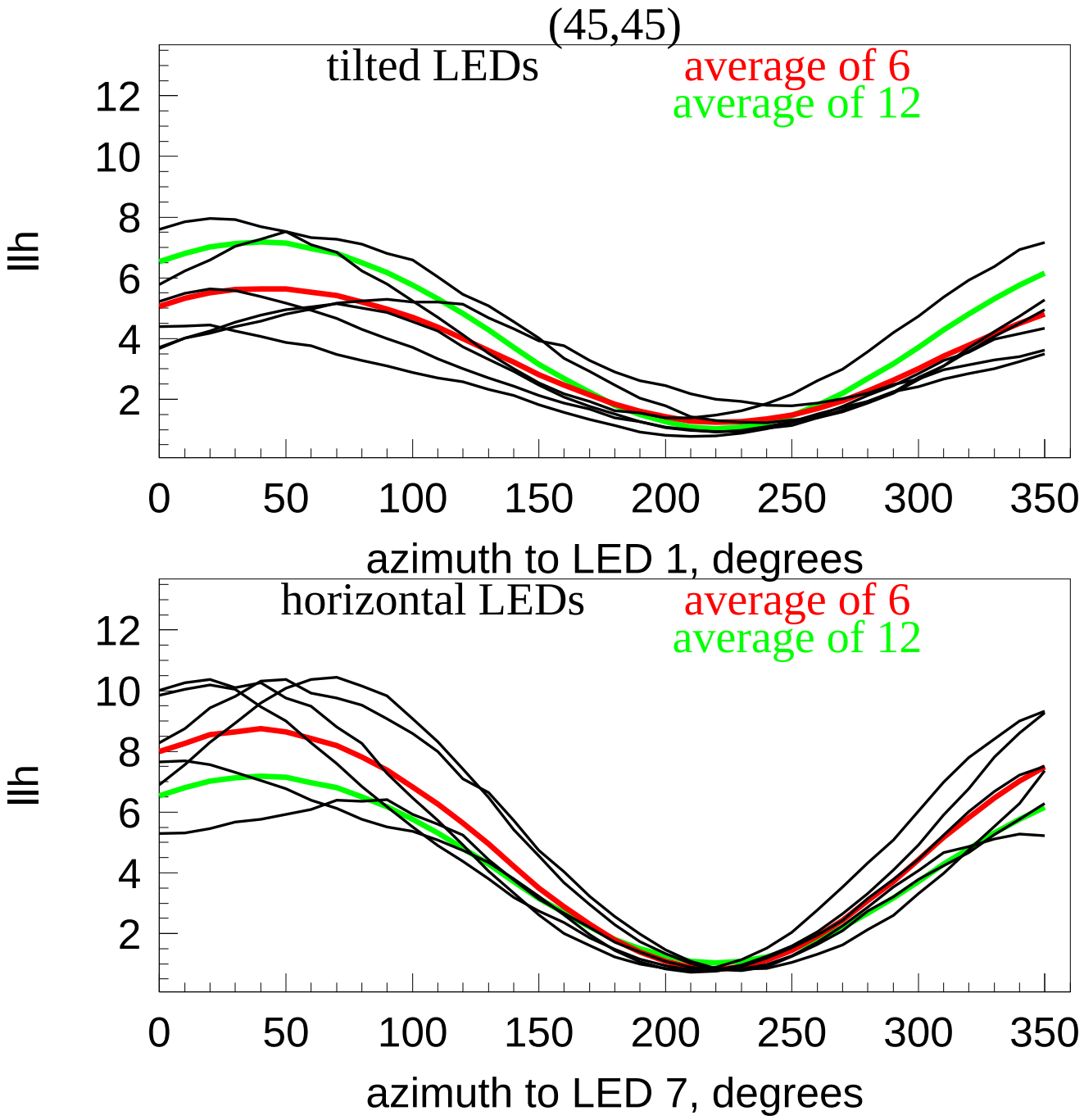

(44,51)
7
1
150
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

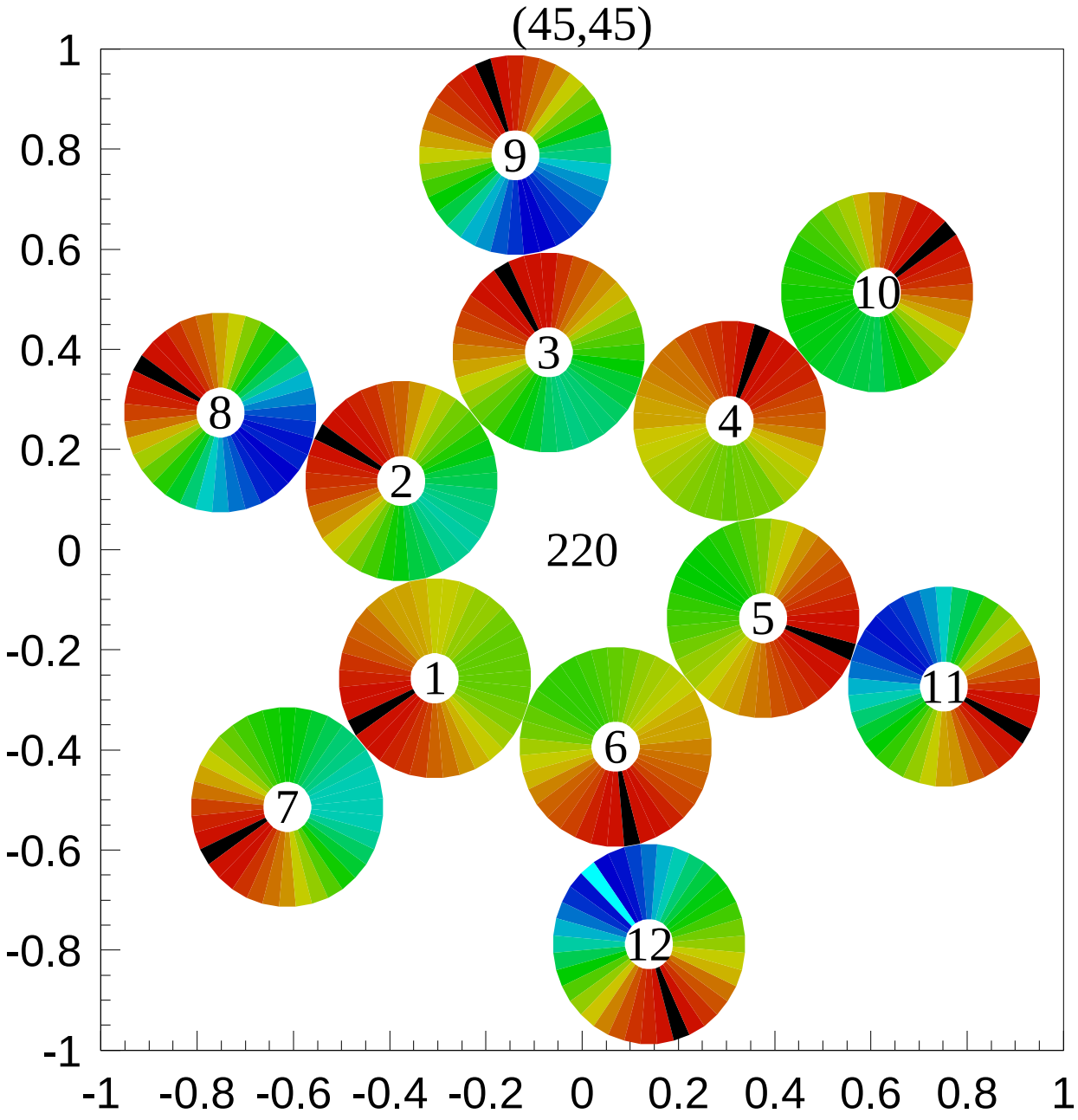

(45,1)
tilted LEDs
average of 6
average of 12
IIh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
IIh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

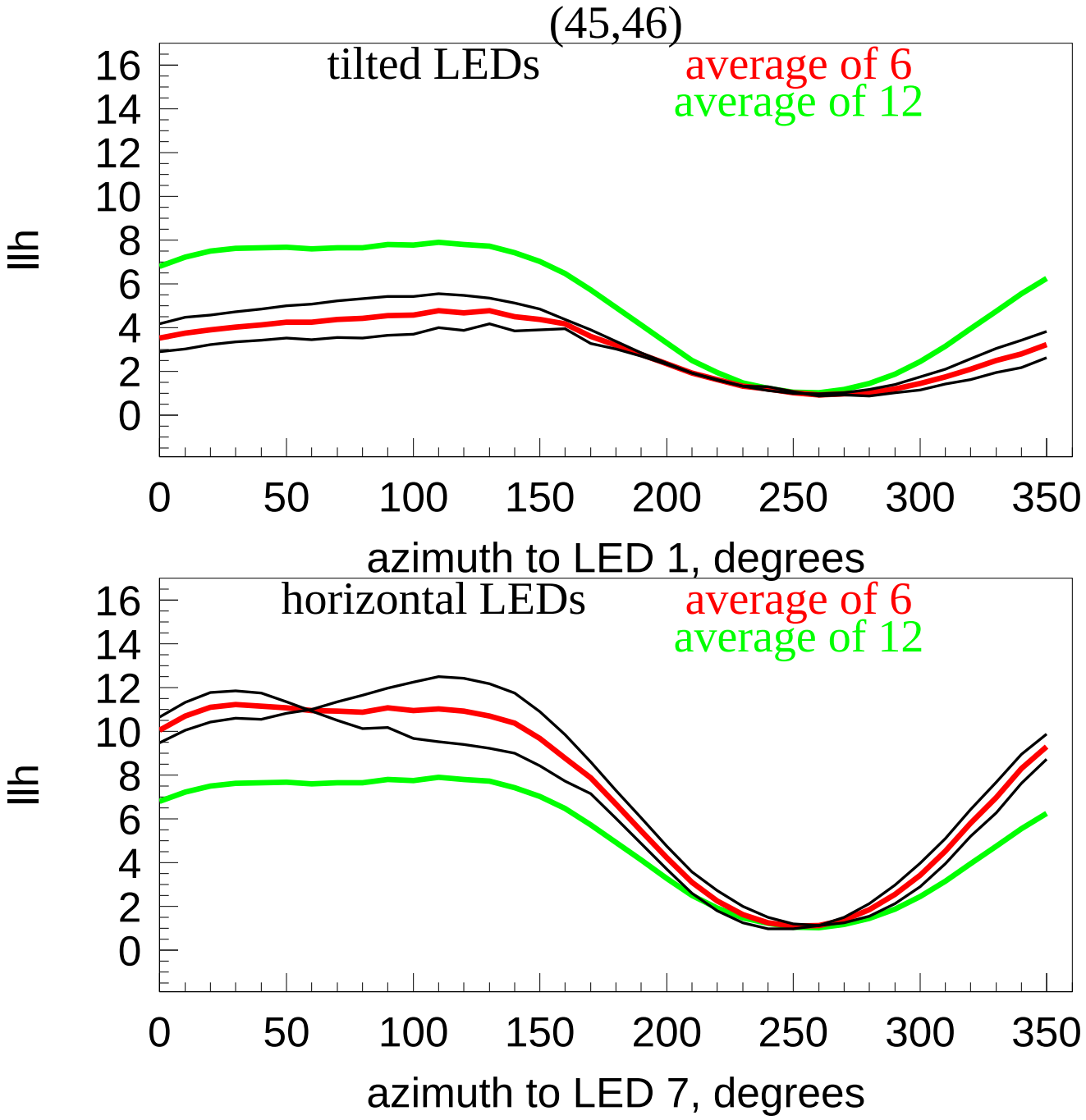

(45,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
11
4
5
9
3
300
2
1
8
7

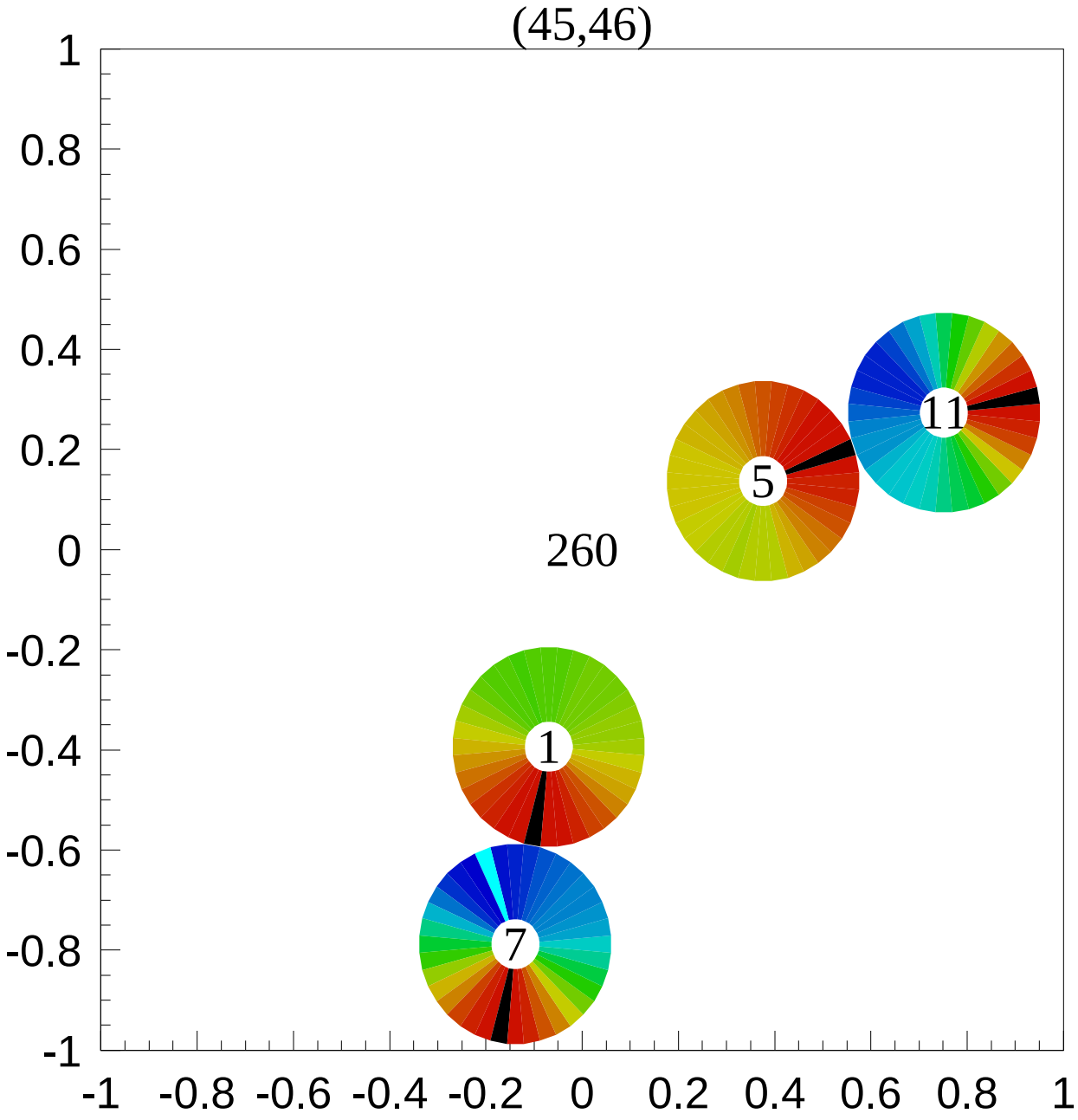

(45,21)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

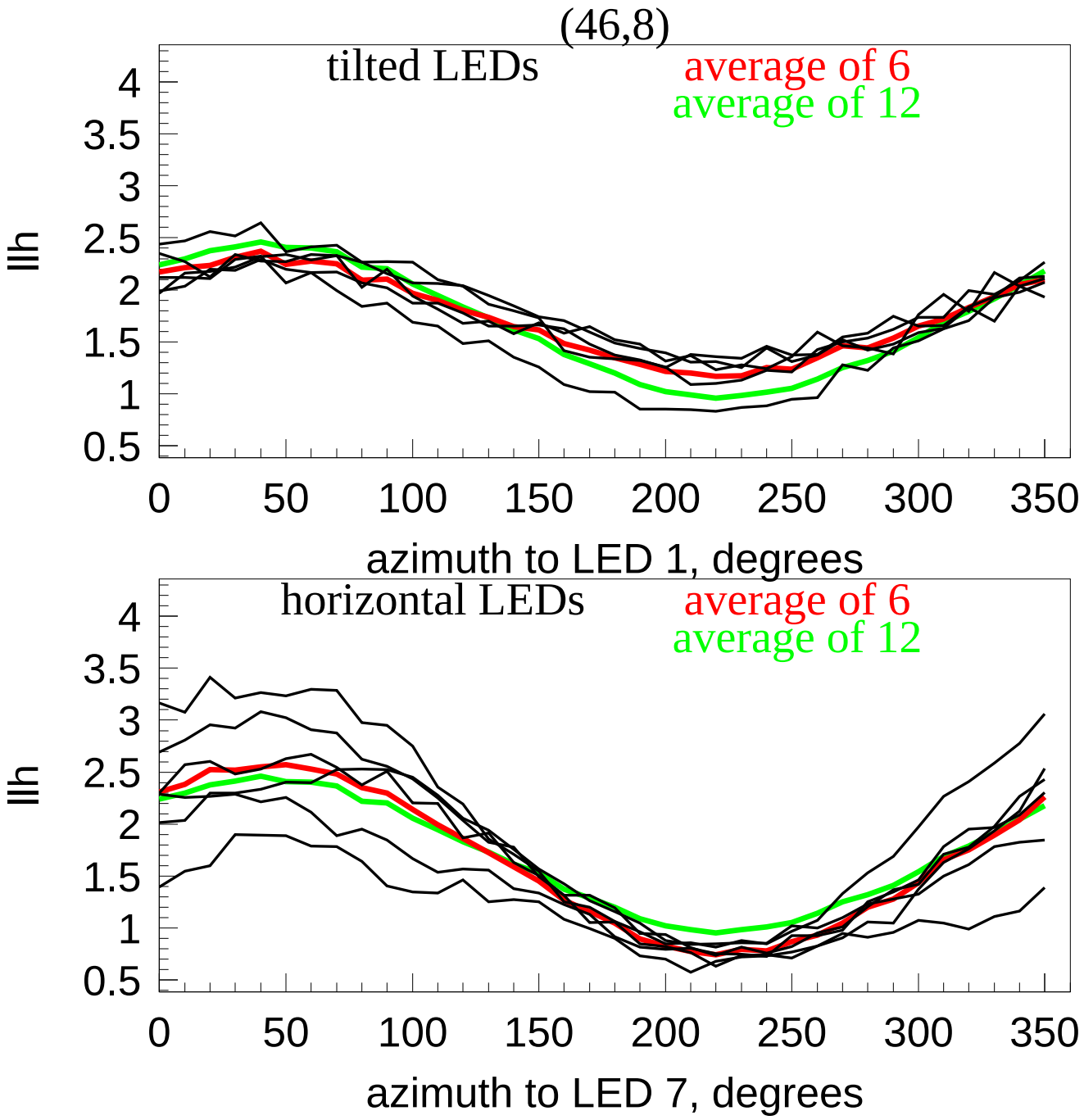

(45,21)
290
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

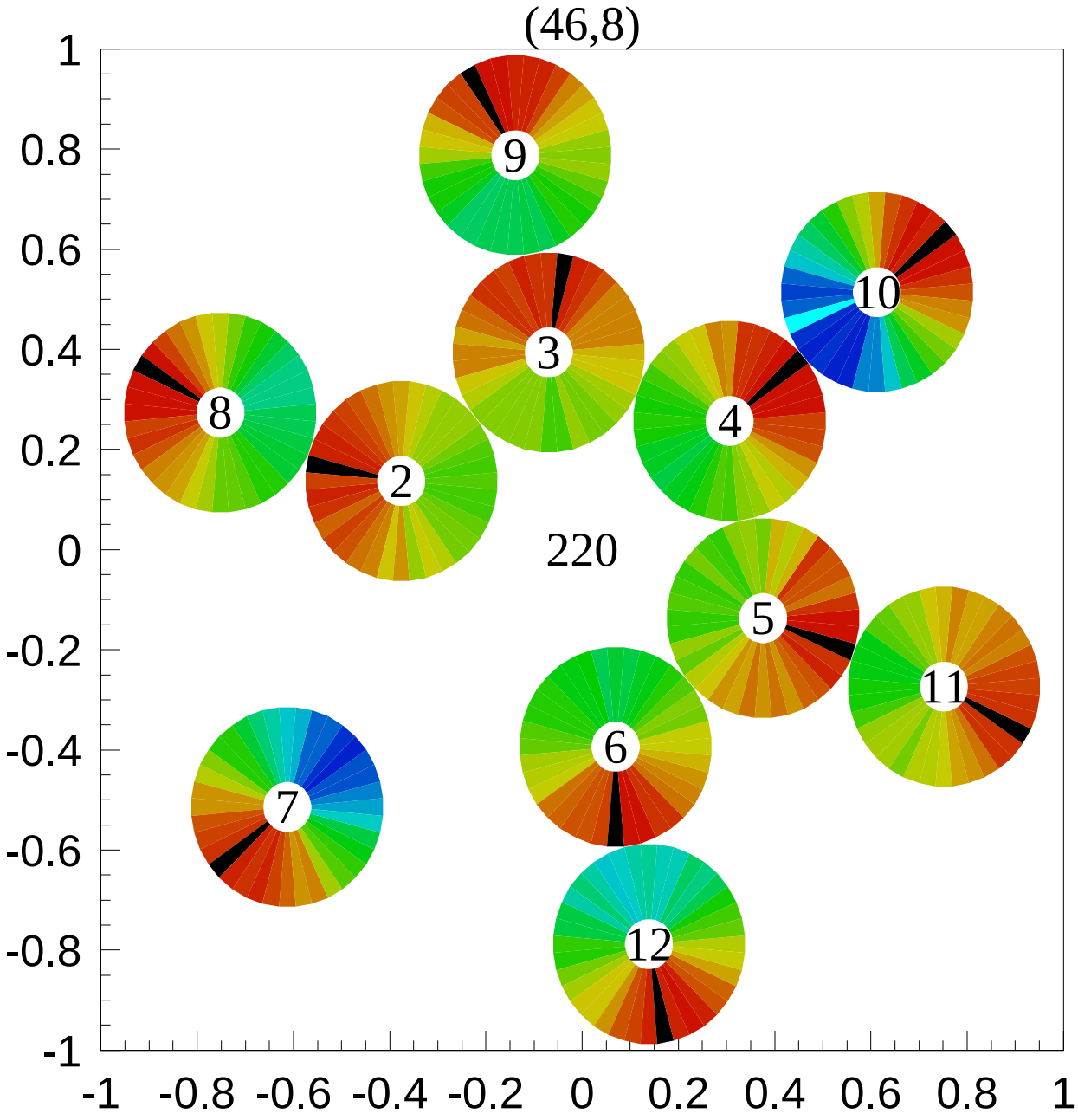

(45,45)
tilted LEDs
average of 6
average of 12
12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

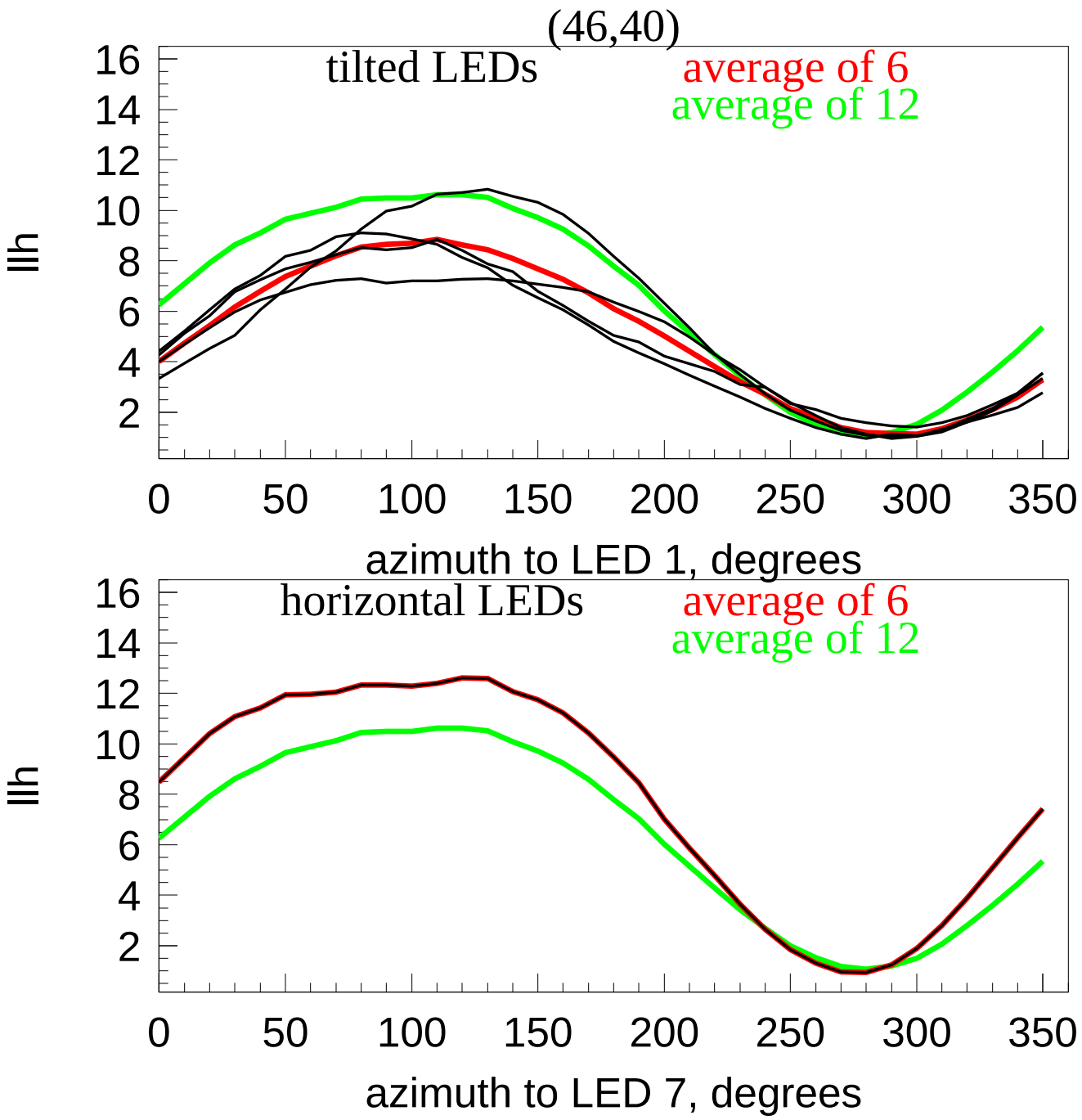

(45,45)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
10
3
8
4
2
220
5
1
11
6
7
12

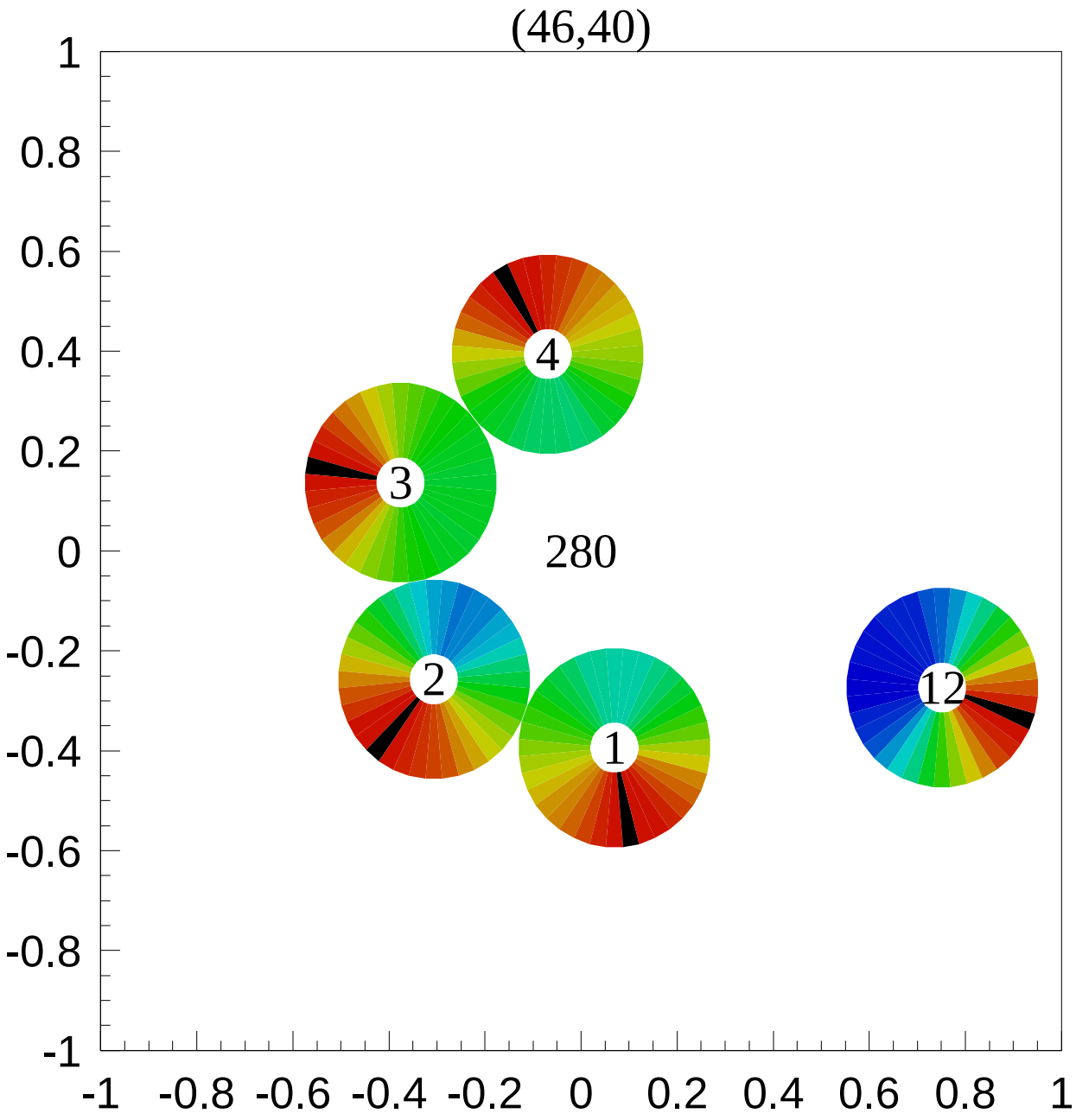

(45,46)
tilted LEDs
average of 6
average of 12
Ilh
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

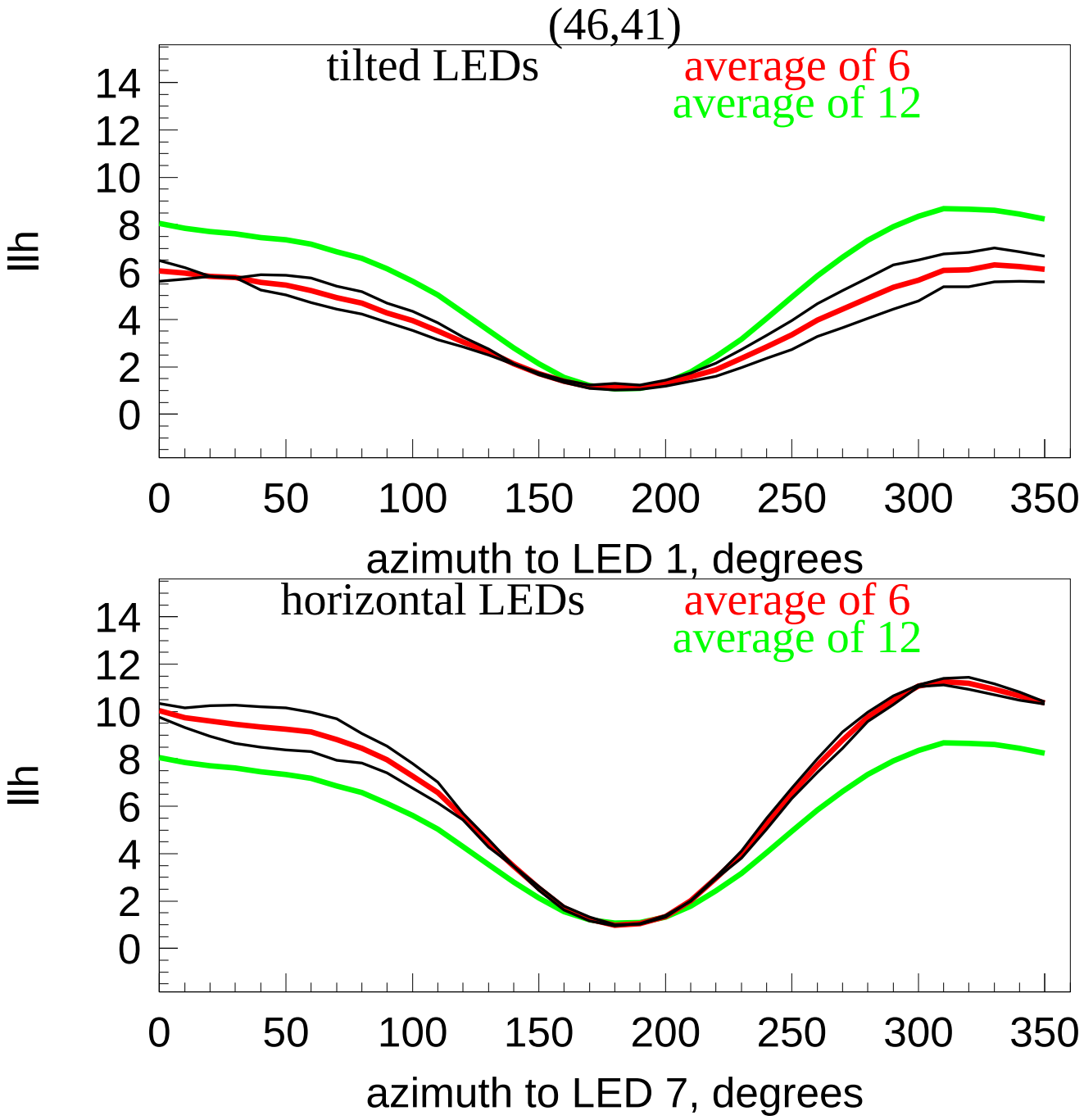

(45,46)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
260
11
5
1
7

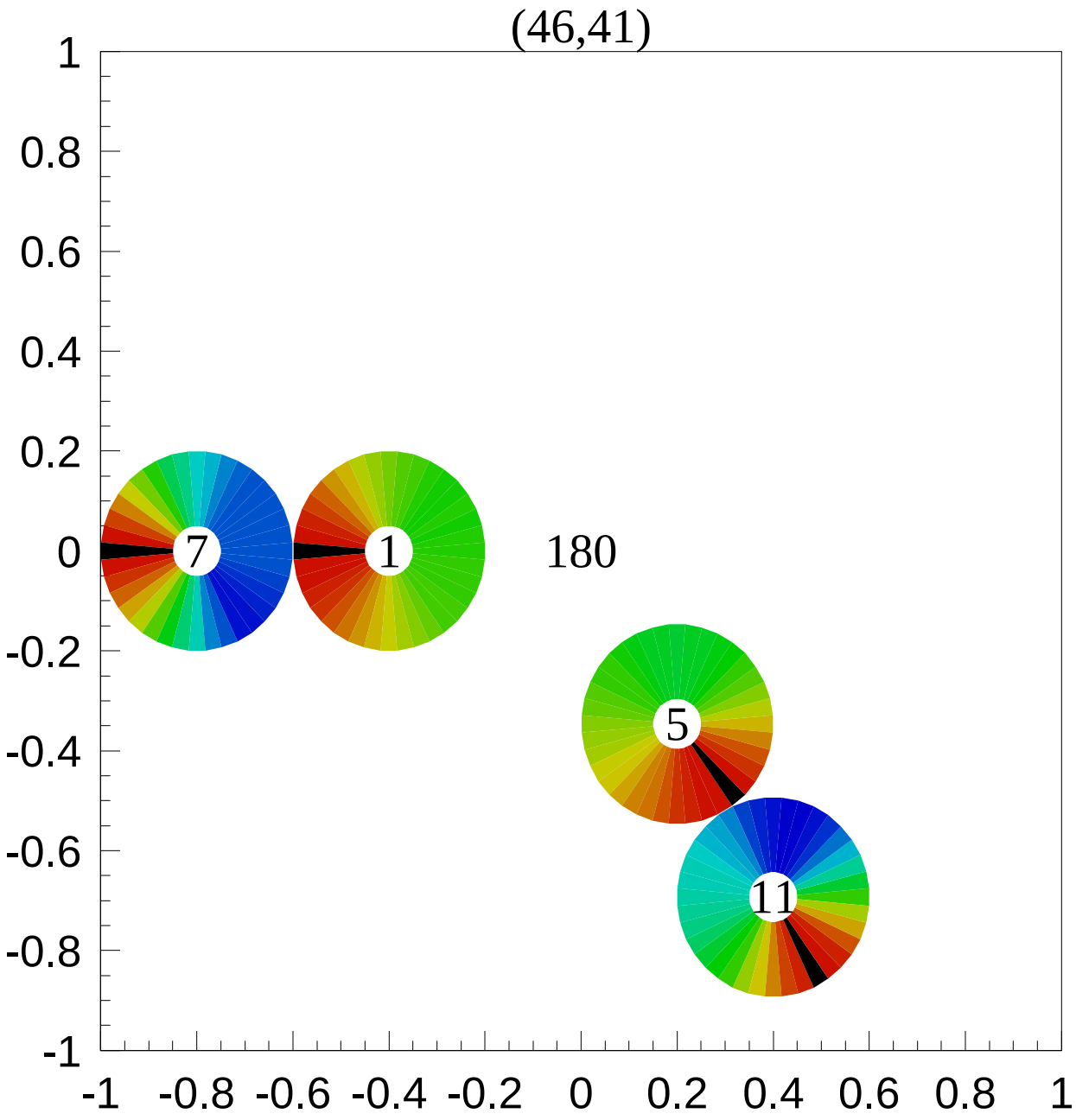

(46,8)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

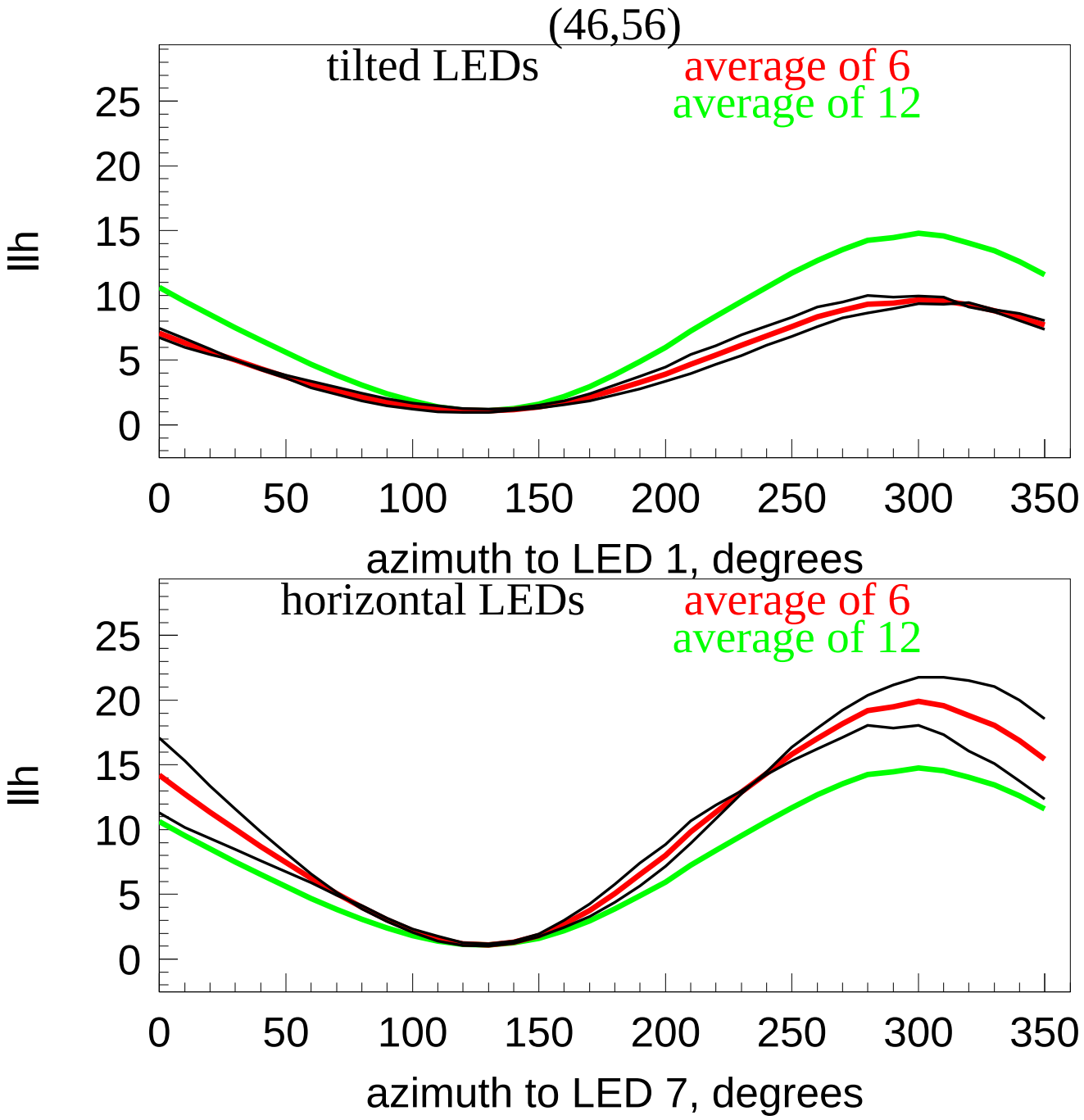

(46,8)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
10
3
8
4
2
220
5
11
6
7
12

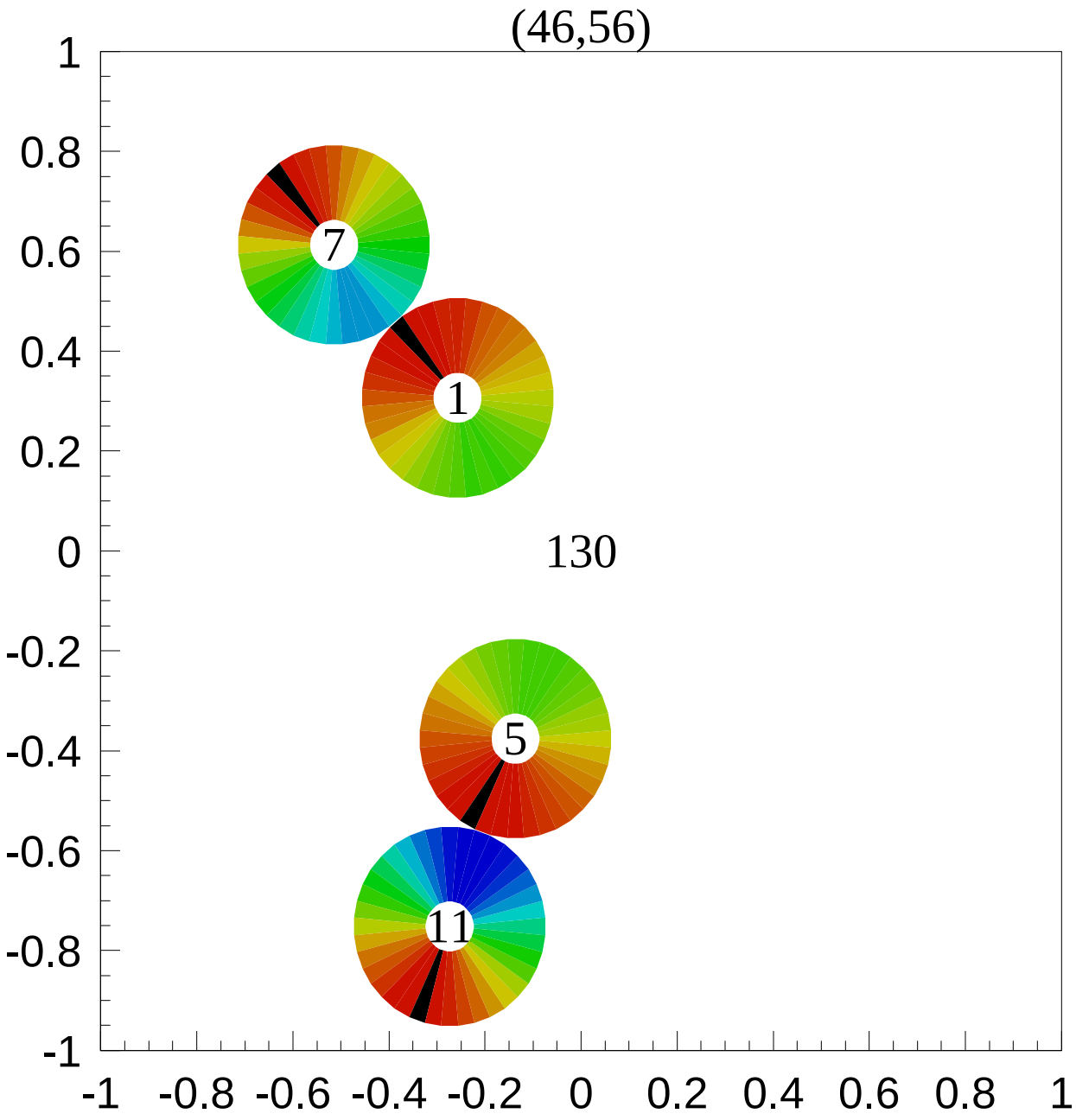

(46,40)
tilted LEDs
average of 6
average of 12
Ilh
16
14
12
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
16
14
12
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

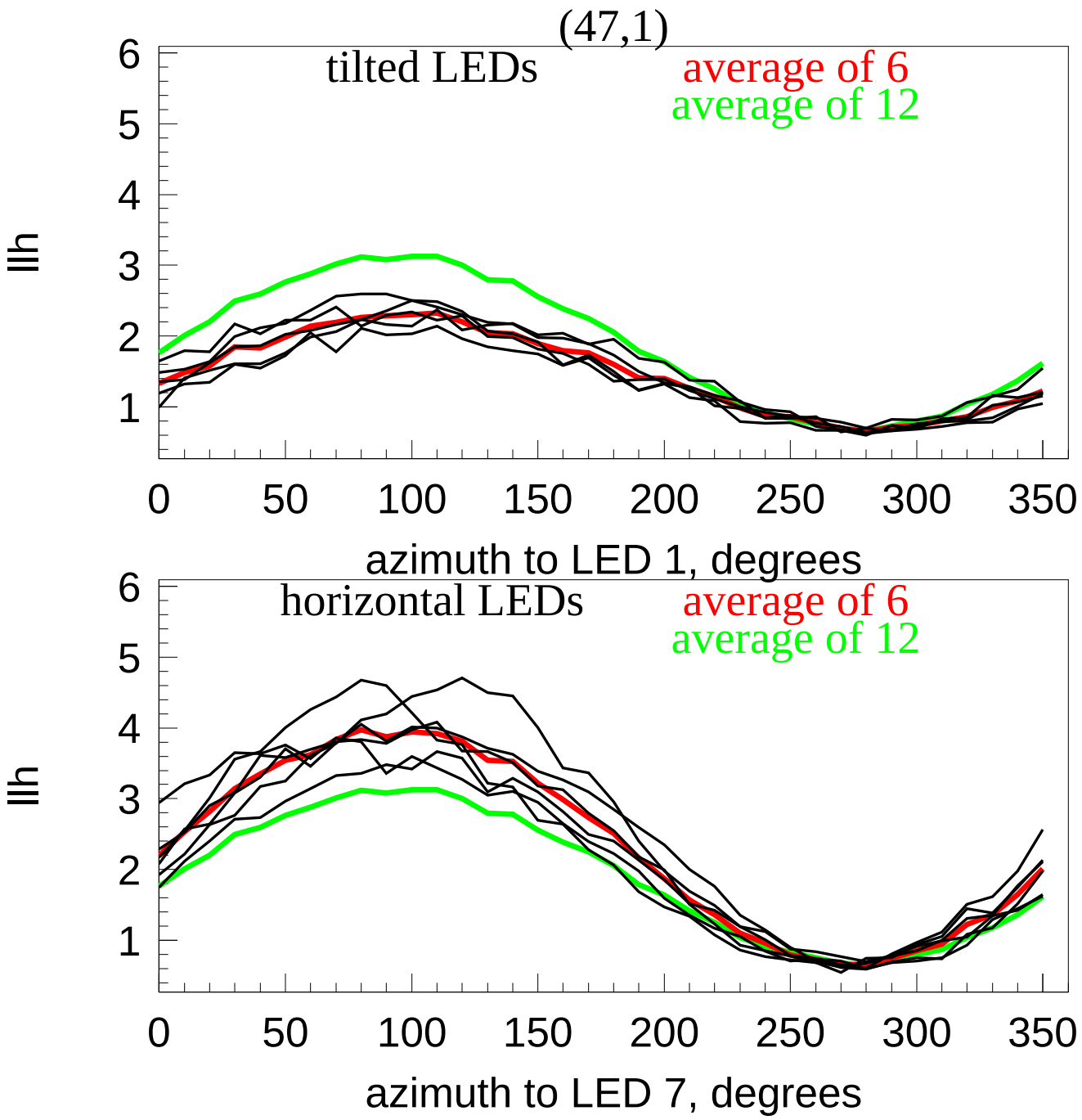

(46,40)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
4
3
280
2
1
12

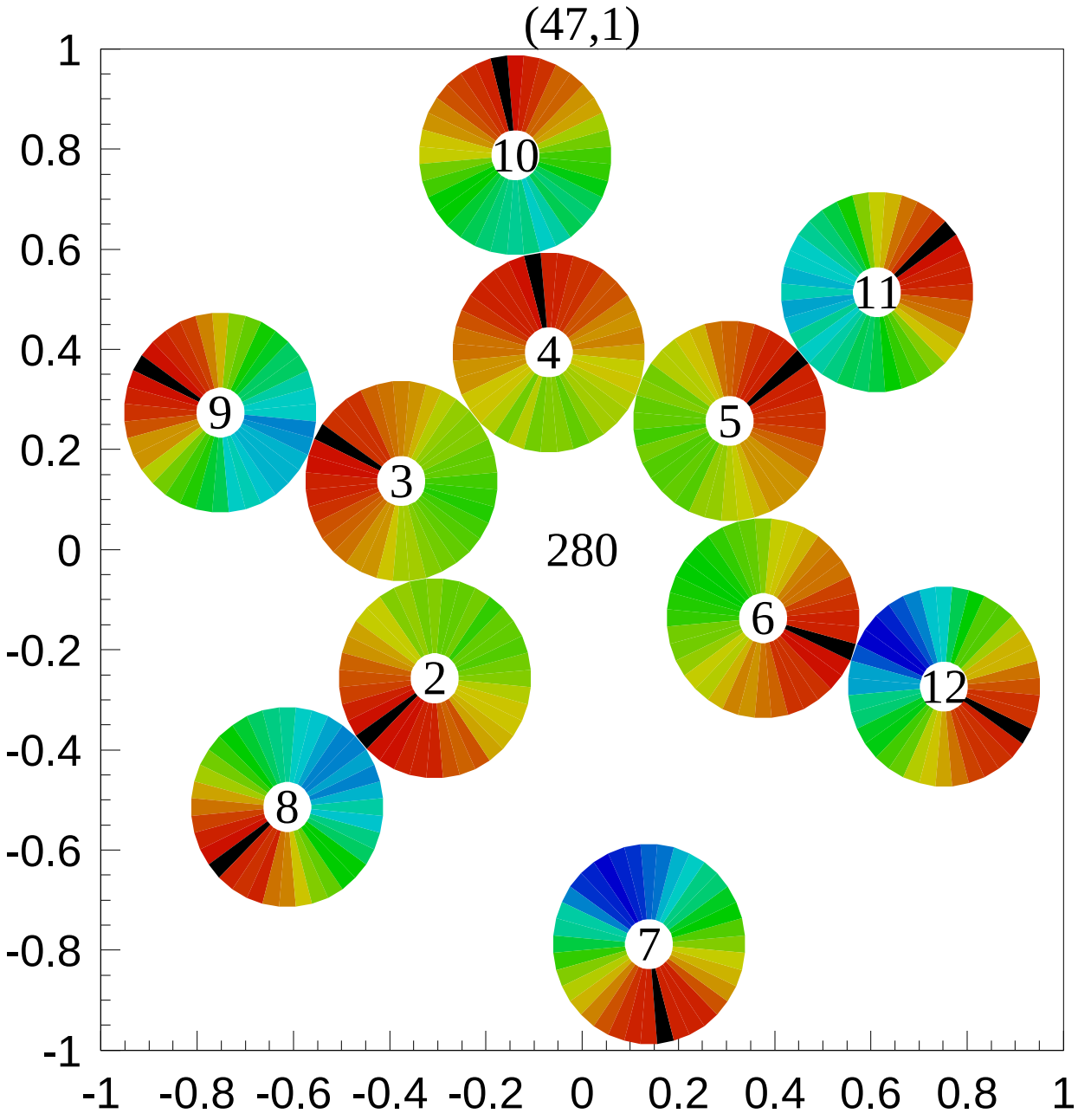

(46,41)
tilted LEDs
average of 6
average of 12
llh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

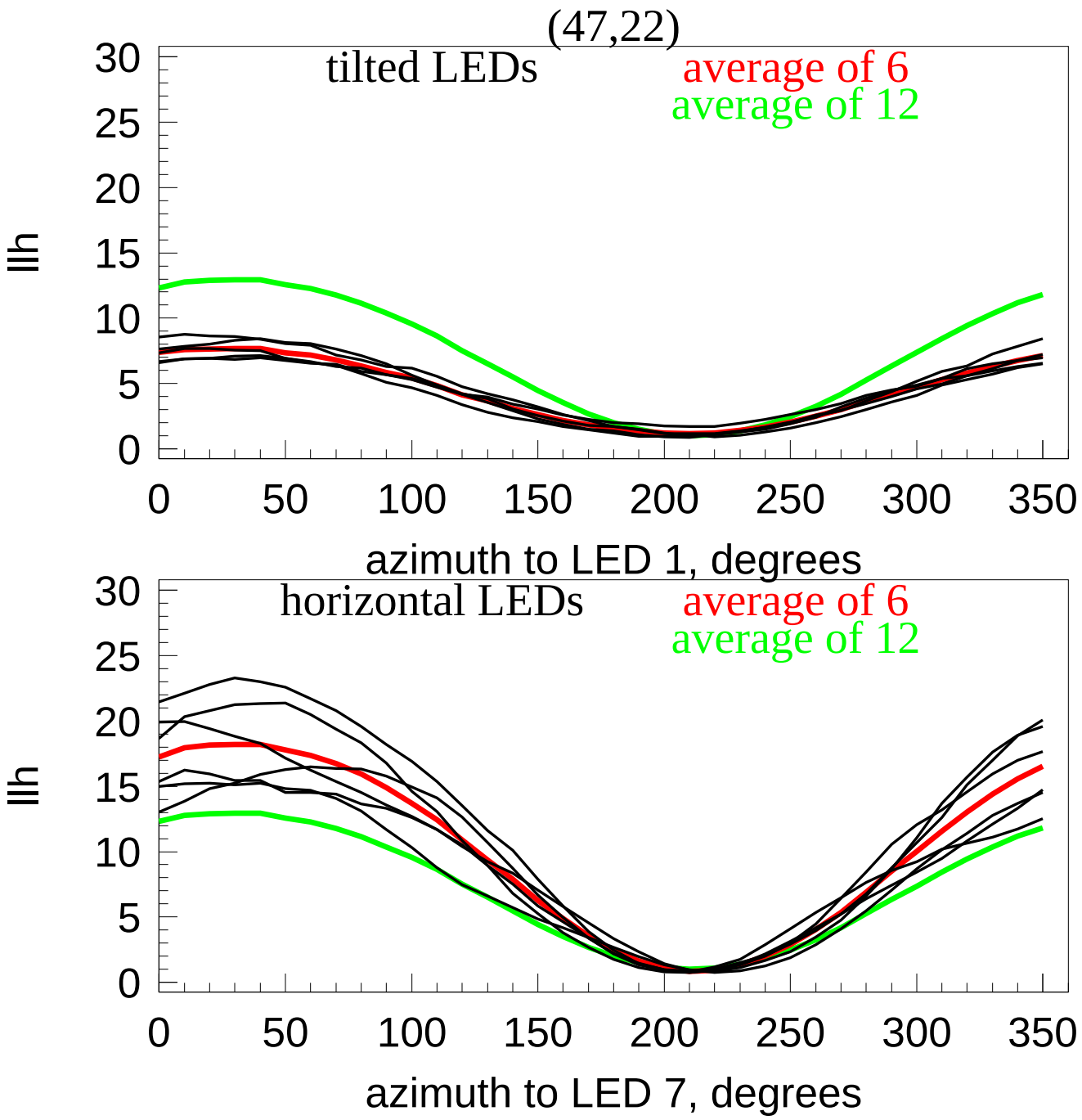

(46,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
180
5
11

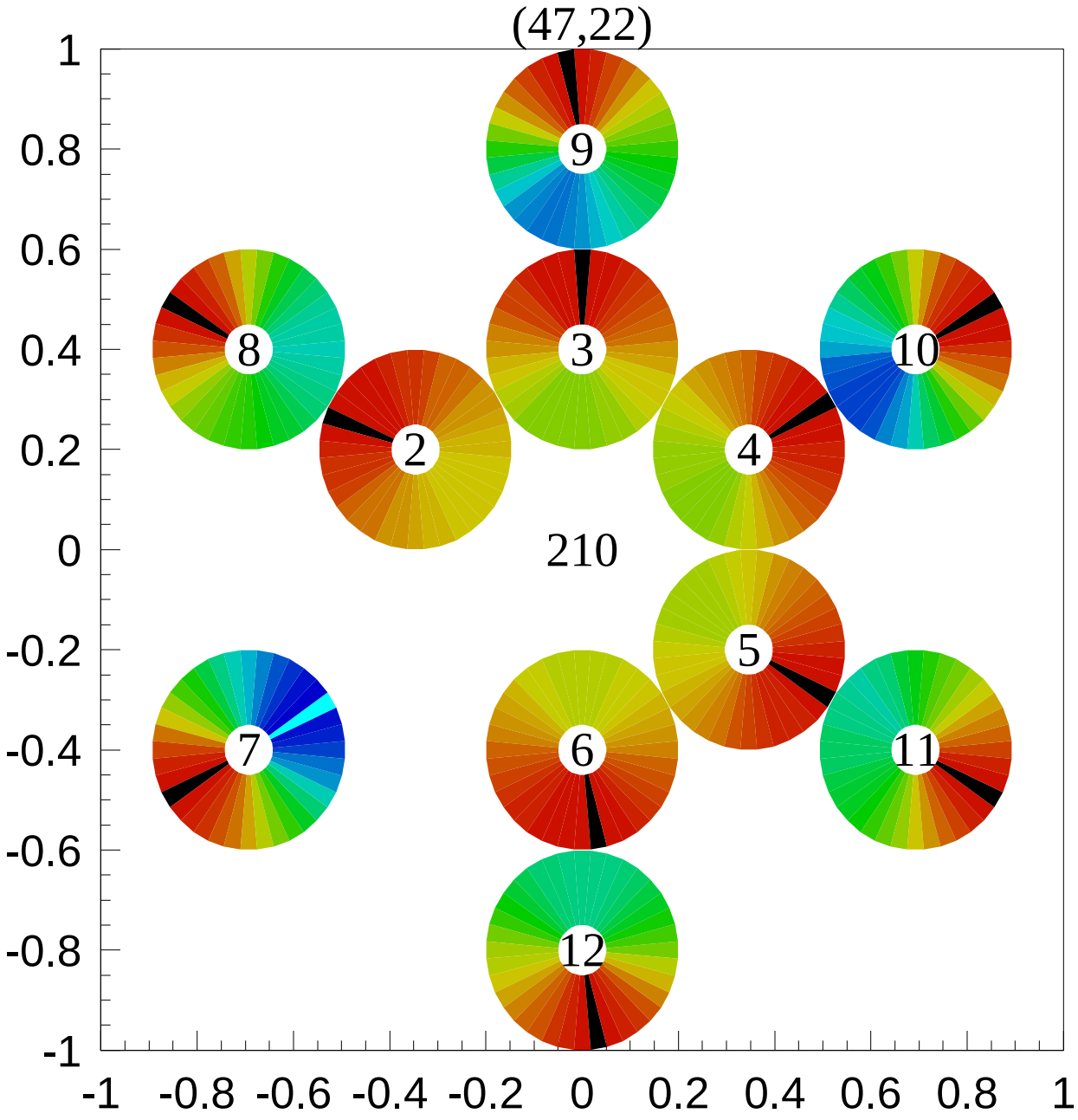

(46,56)
tilted LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

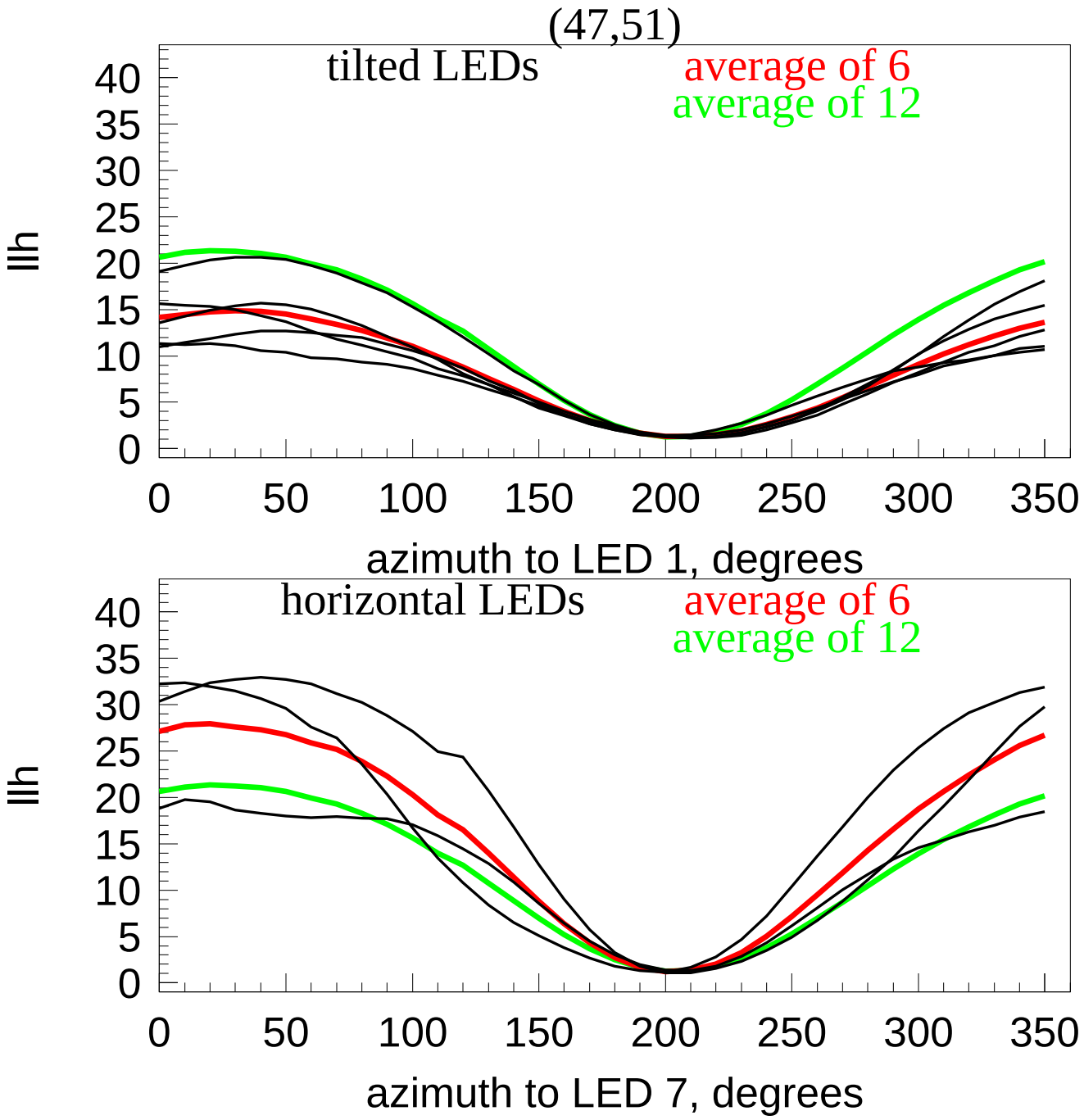

(46,56)
7
1
130
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

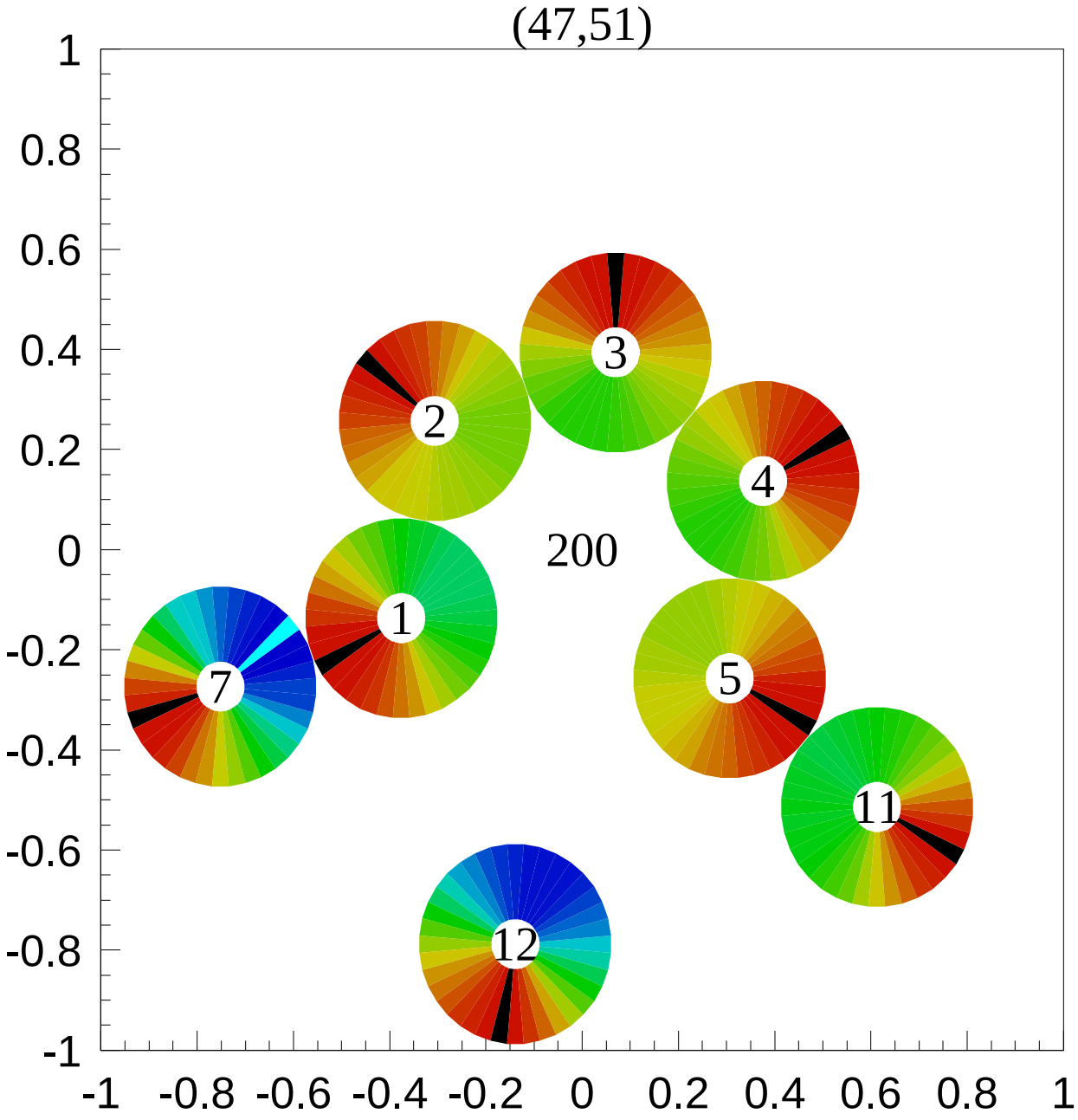

(47,1)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

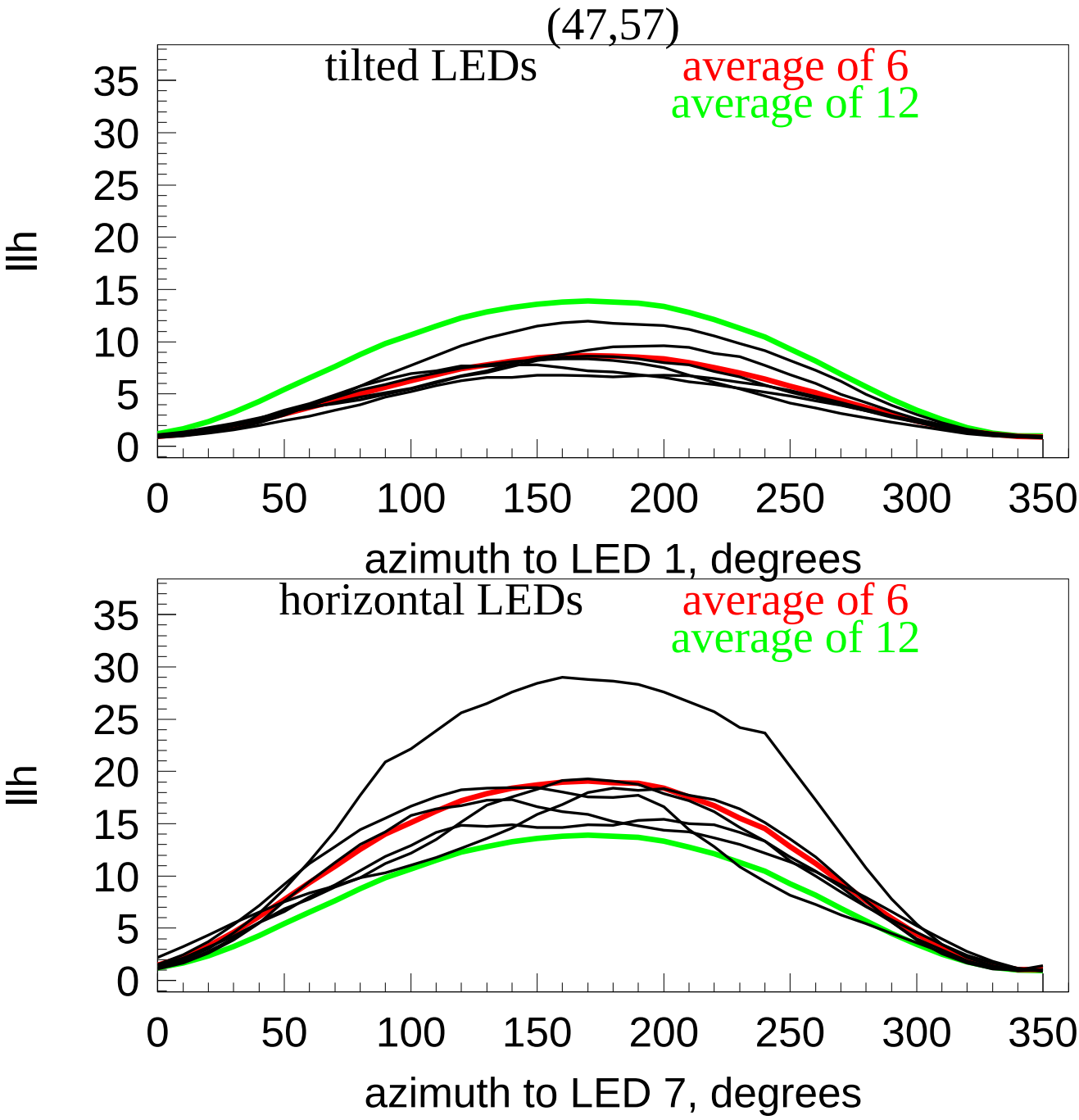

(47,1)
10
11
4
9
5
3
280
6
12
2
8
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

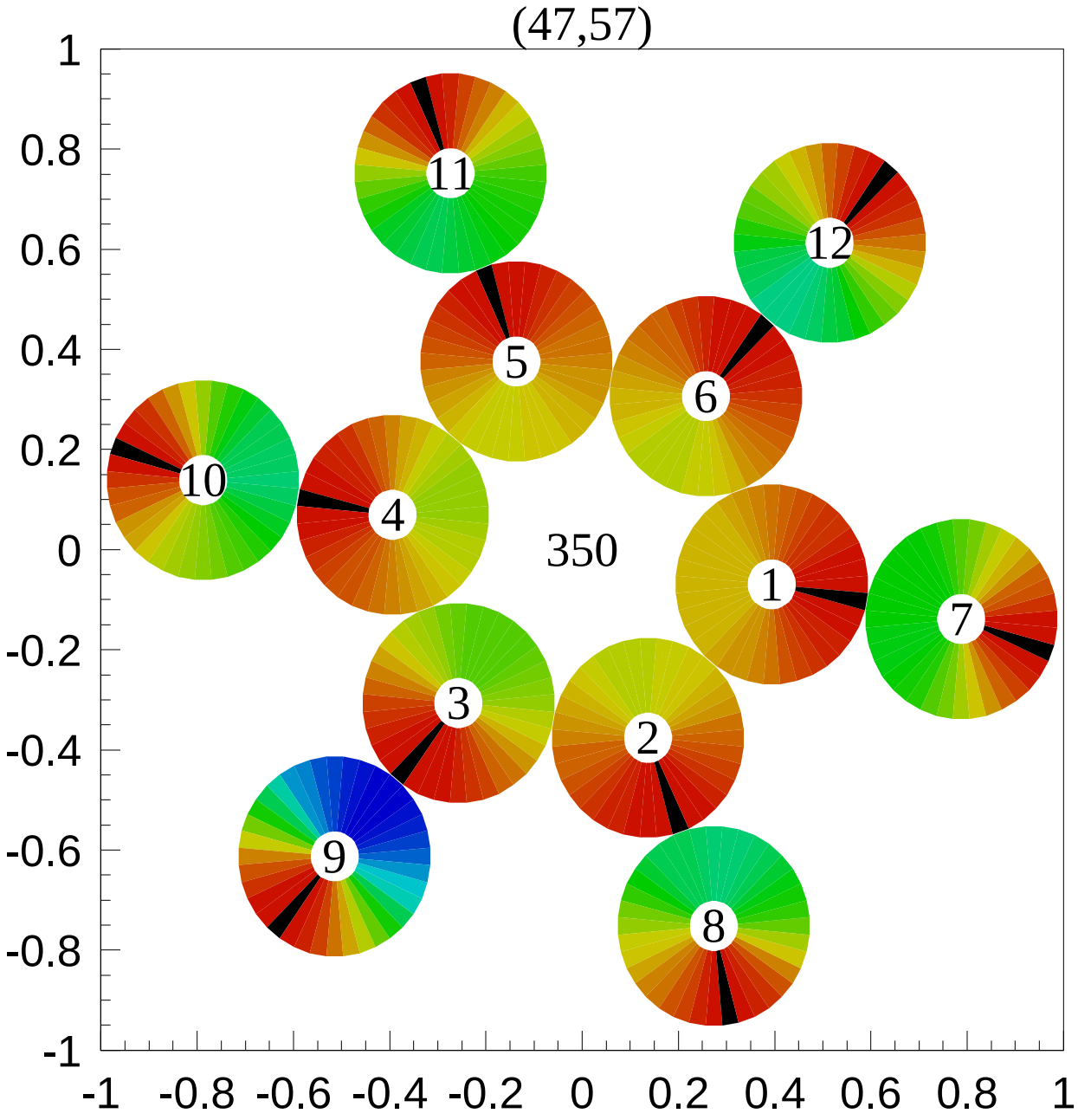

(47,22)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

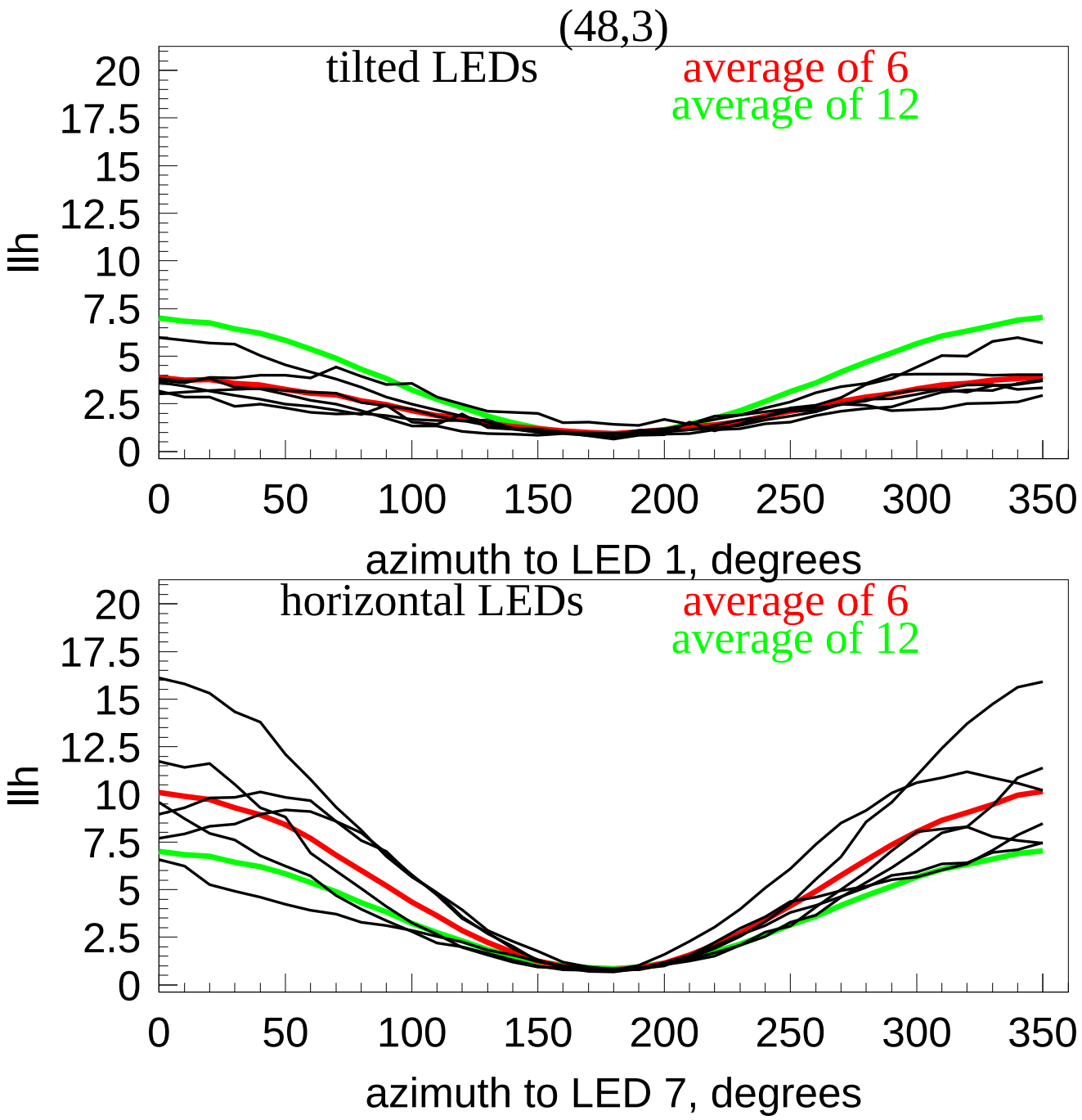

(47,22)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
8
3
10
2
4
210
5
7
6
11
12

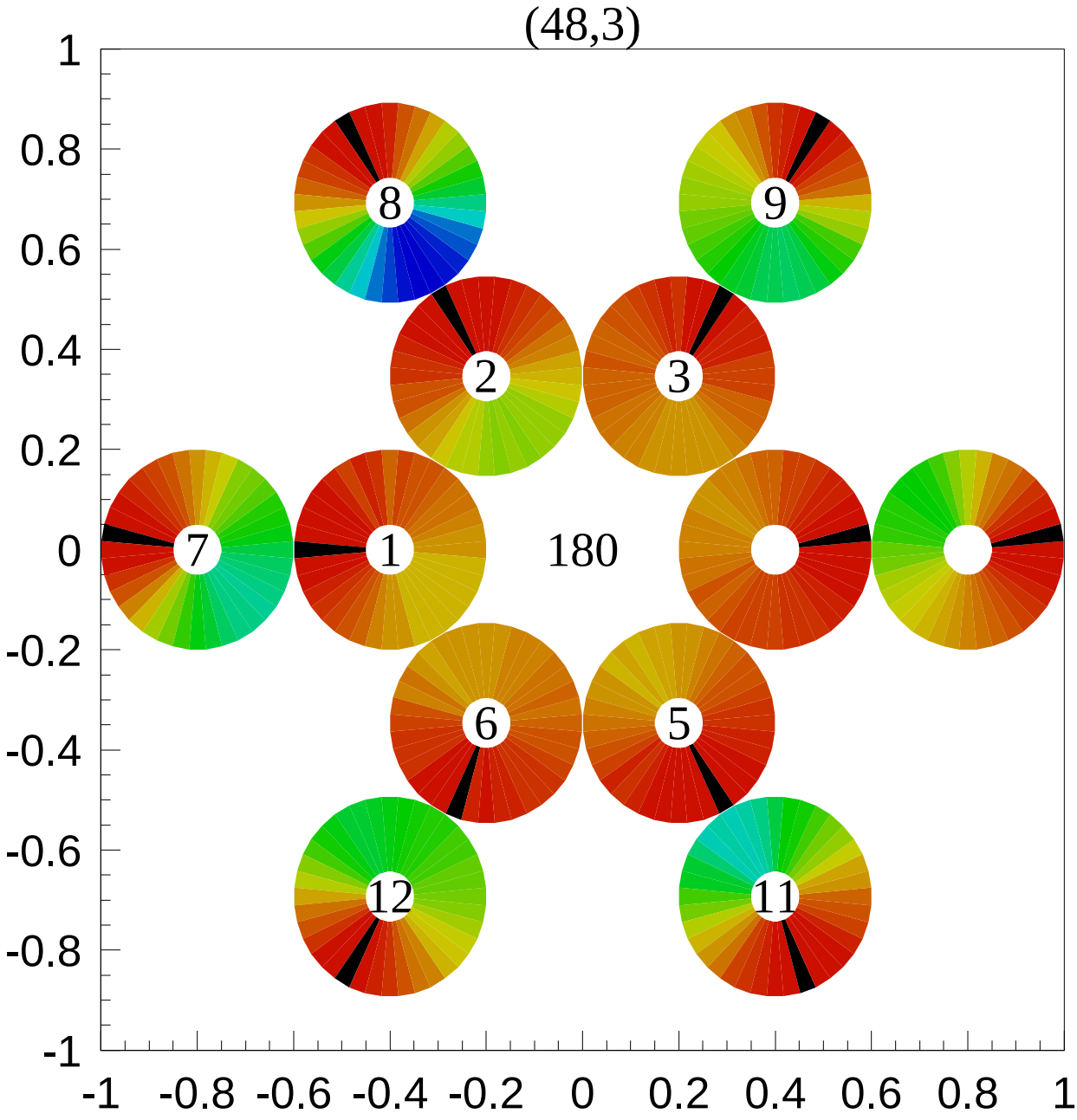

(47,51)
tilted LEDs
average of 6
average of 12
Ilh
0
5
10
15
20
25
30
35
40
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

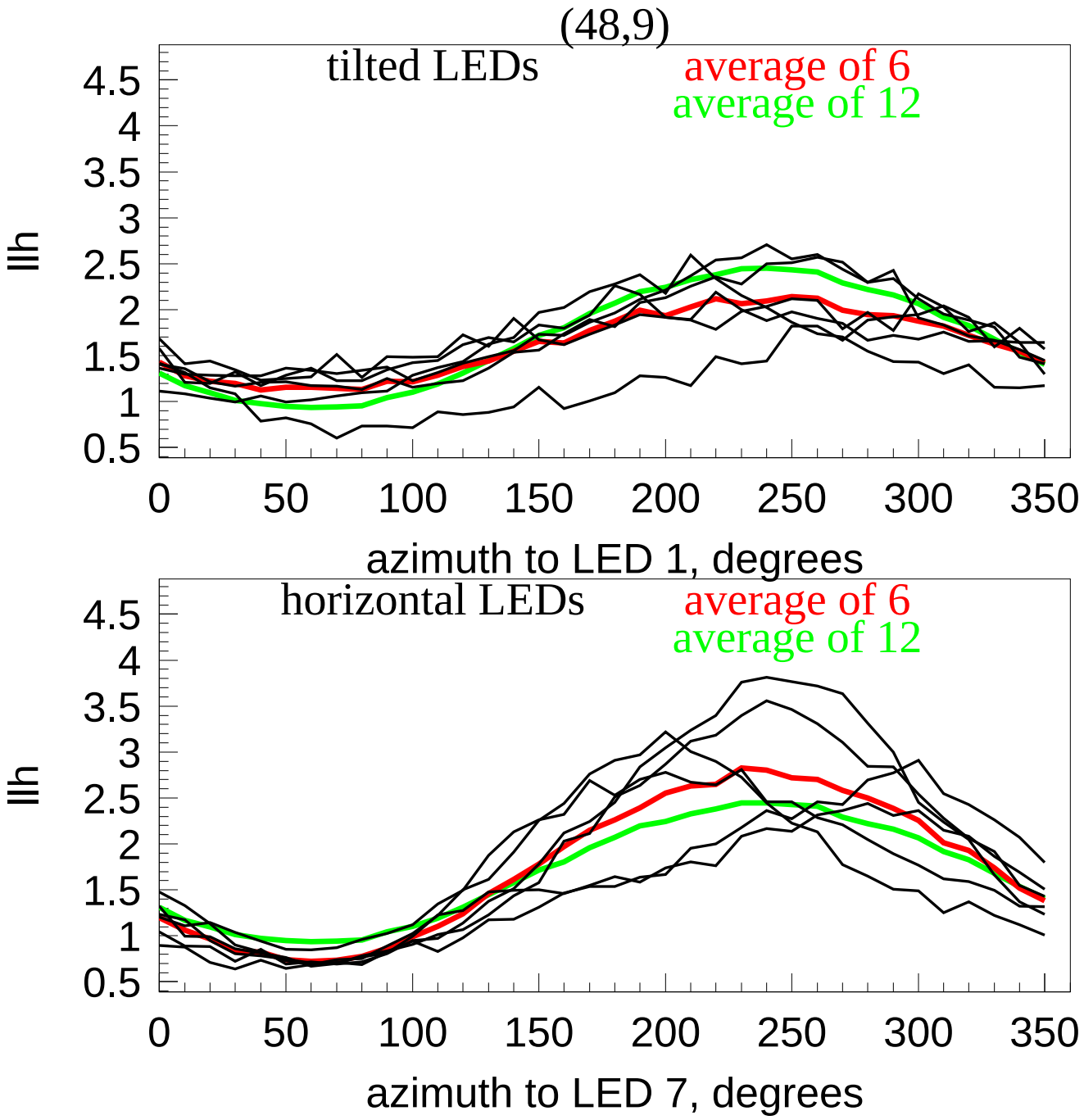

(47,51)
200
1
2
3
4
5
7
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

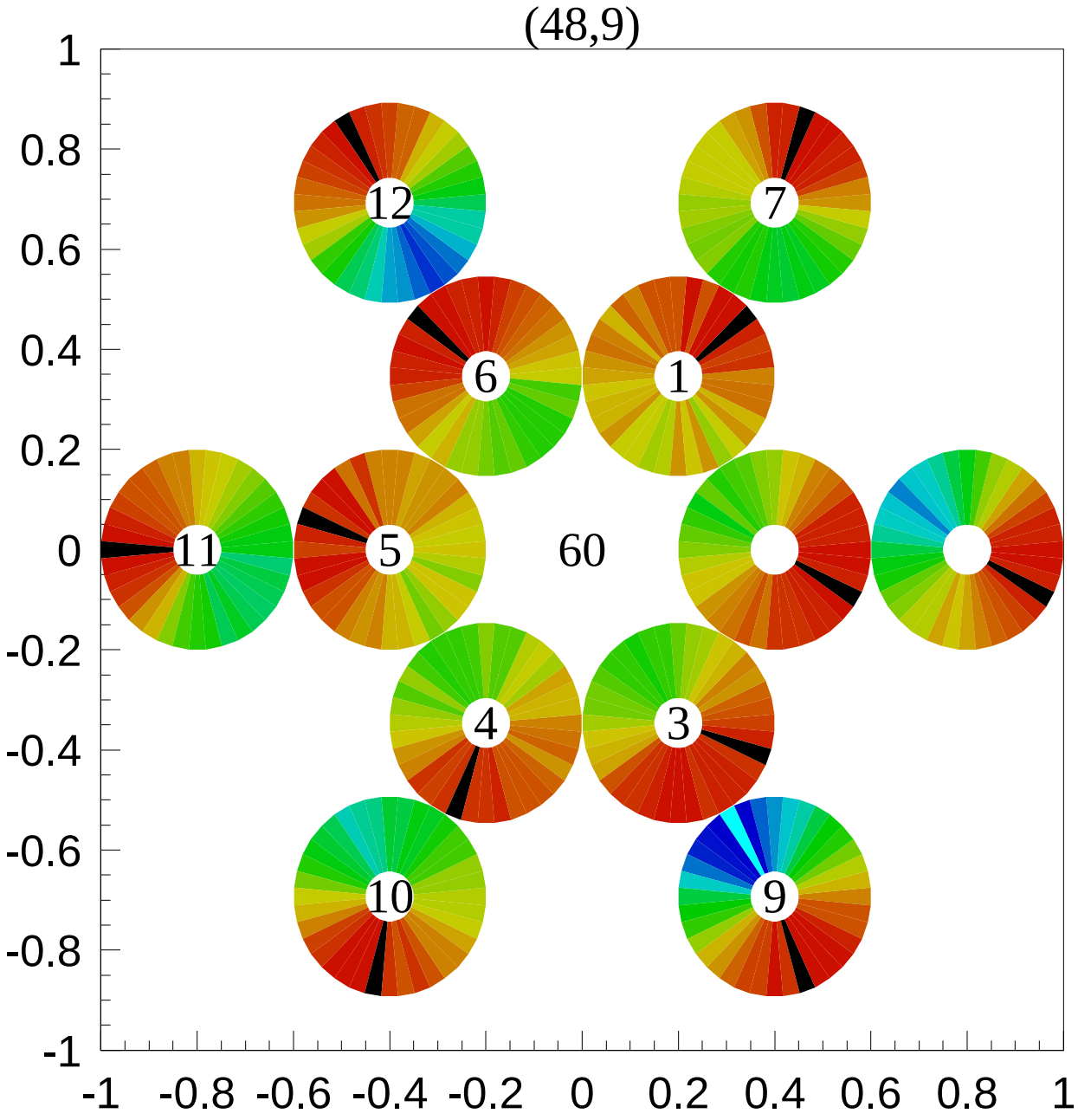

(47,57)
tilted LEDs
average of 6
average of 12
llh
0
5
10
15
20
25
30
35
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

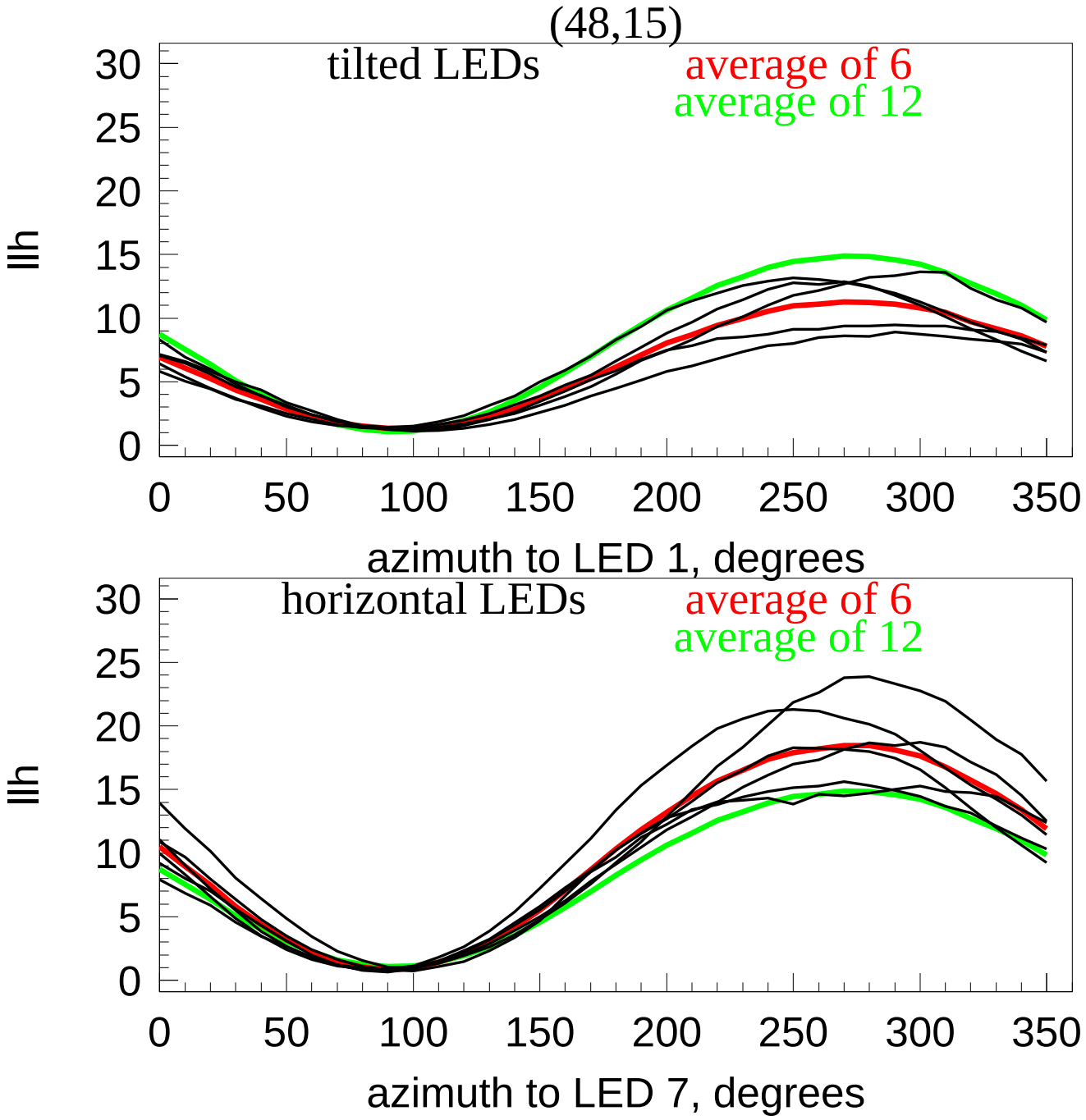

(47,57)
350
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

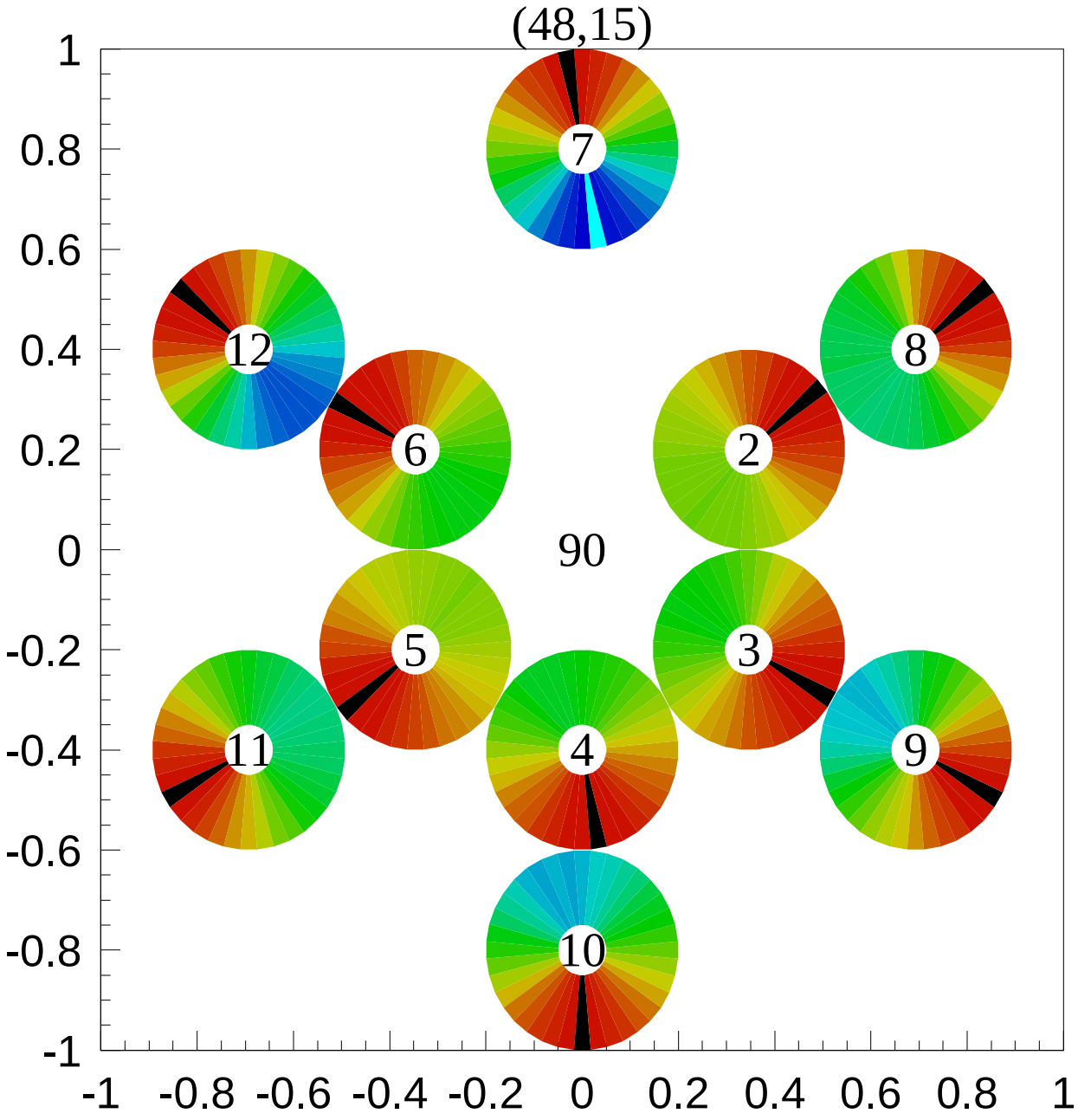

(48,3)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

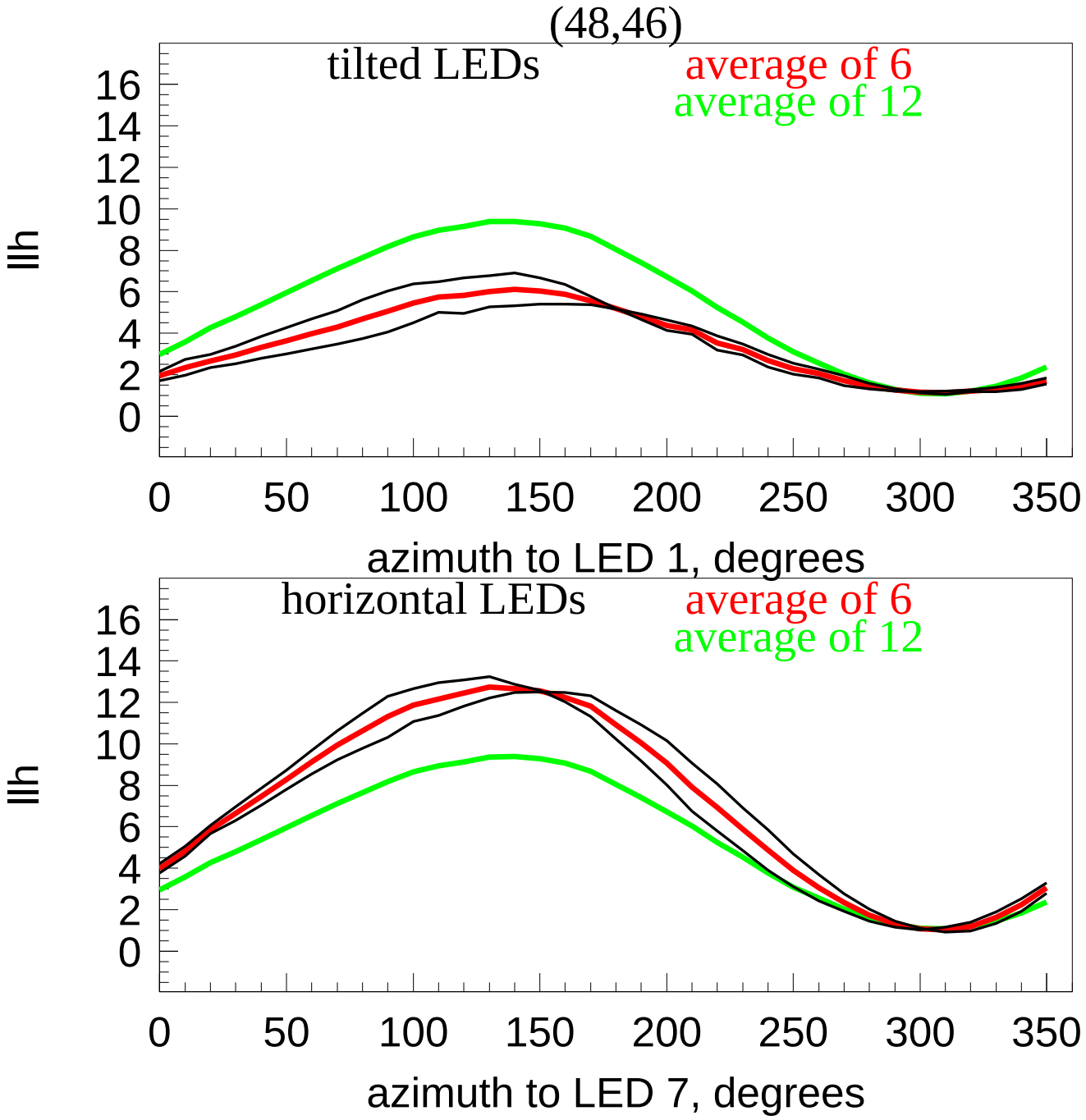

(48,3)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
9
2
3
7
1
180
6
5
12
11

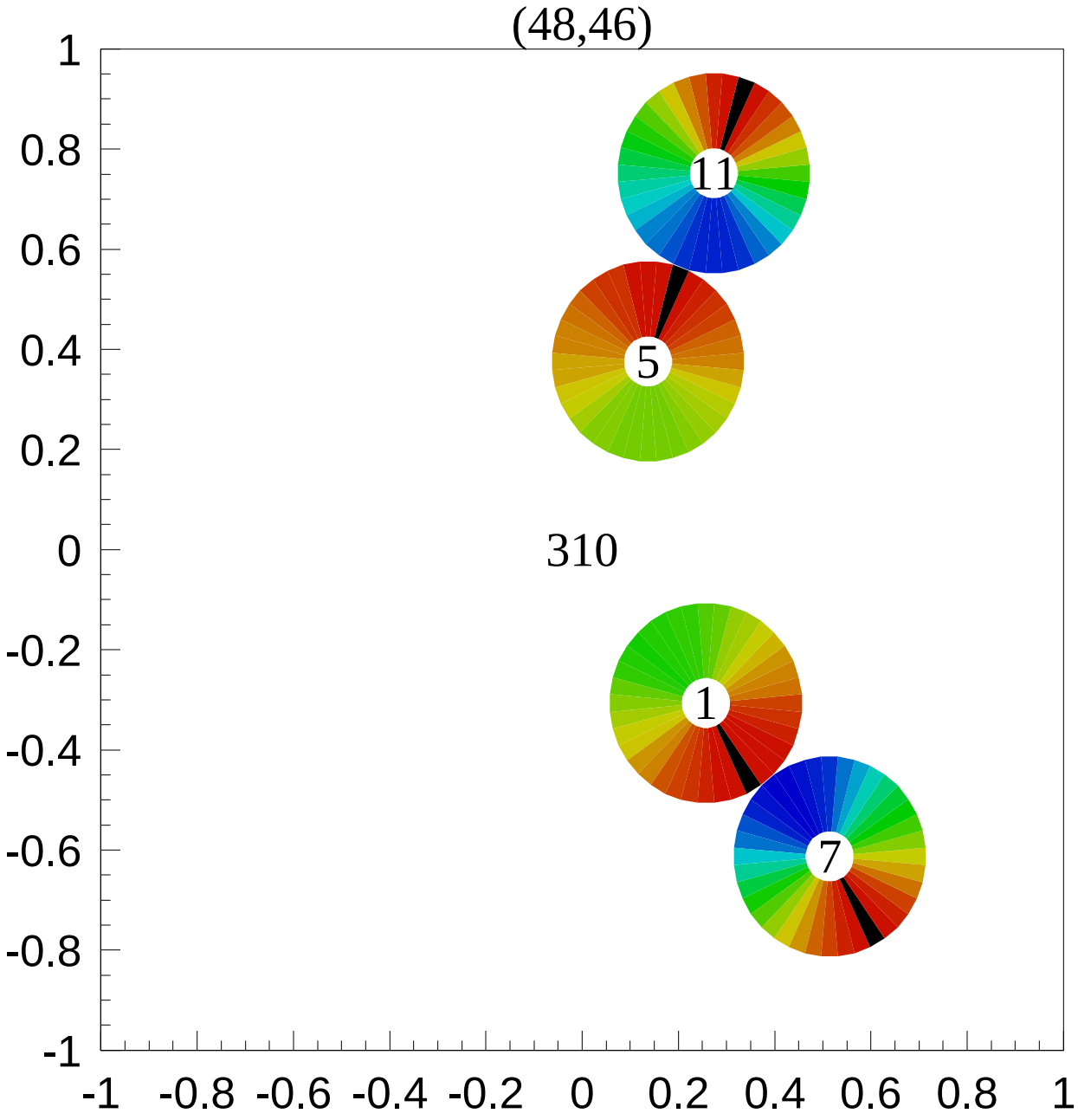

(48,9)
tilted LEDs
average of 6
average of 12
llh
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

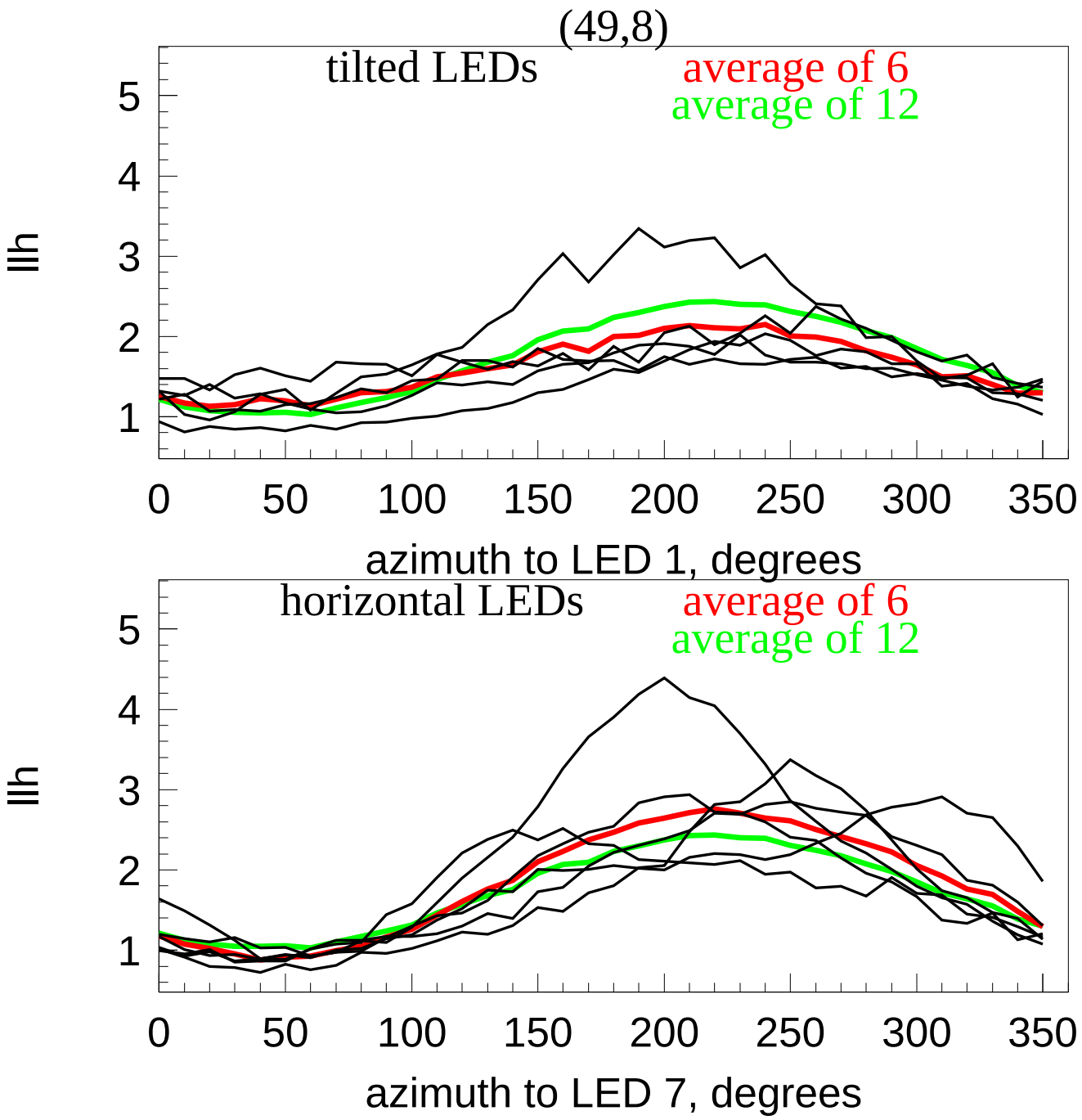

(48,9)
12
7
6
1
11
5
60
4
3
10
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

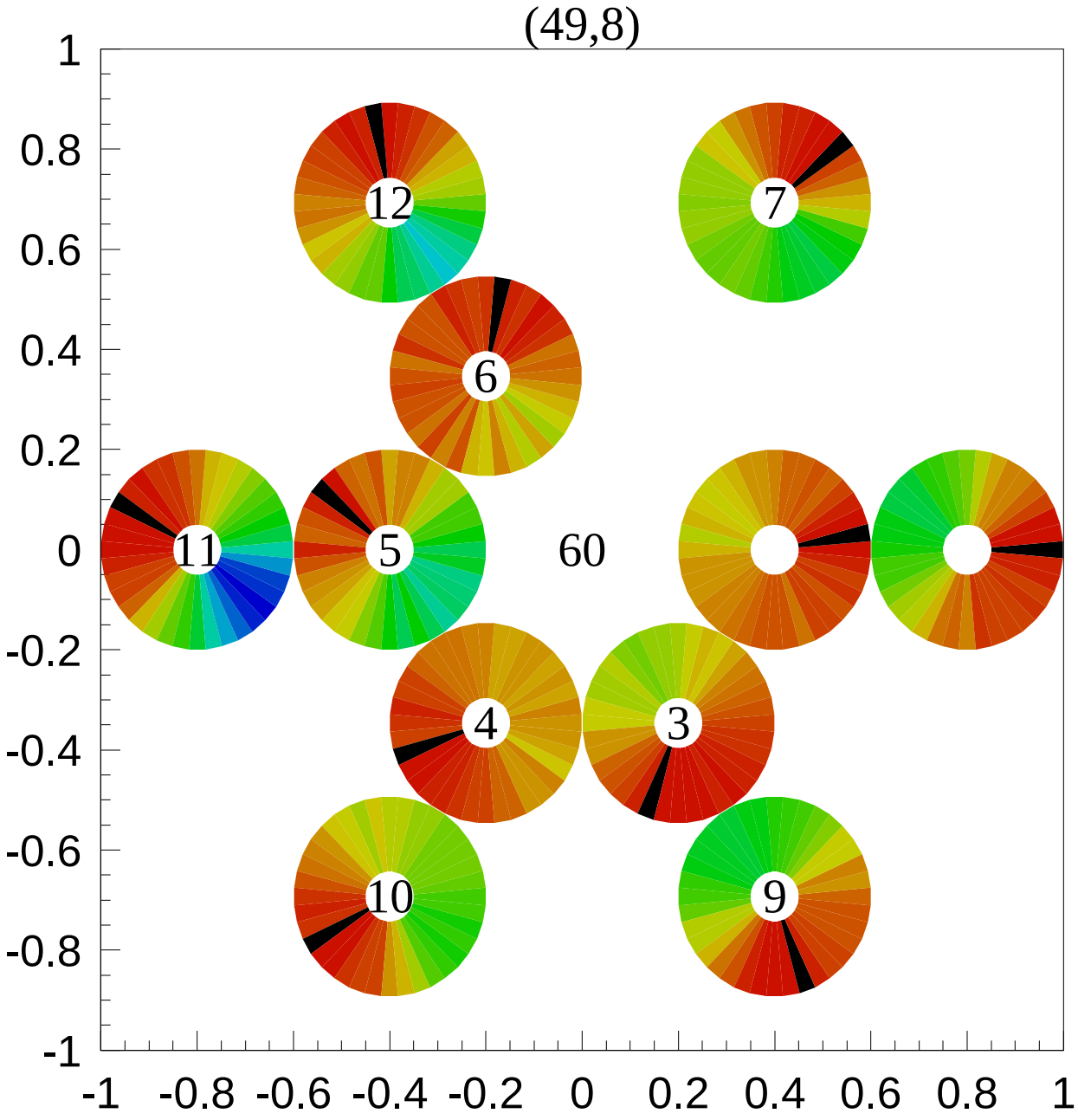

(48,15)
tilted LEDs
average of 6
average of 12
30
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
30
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

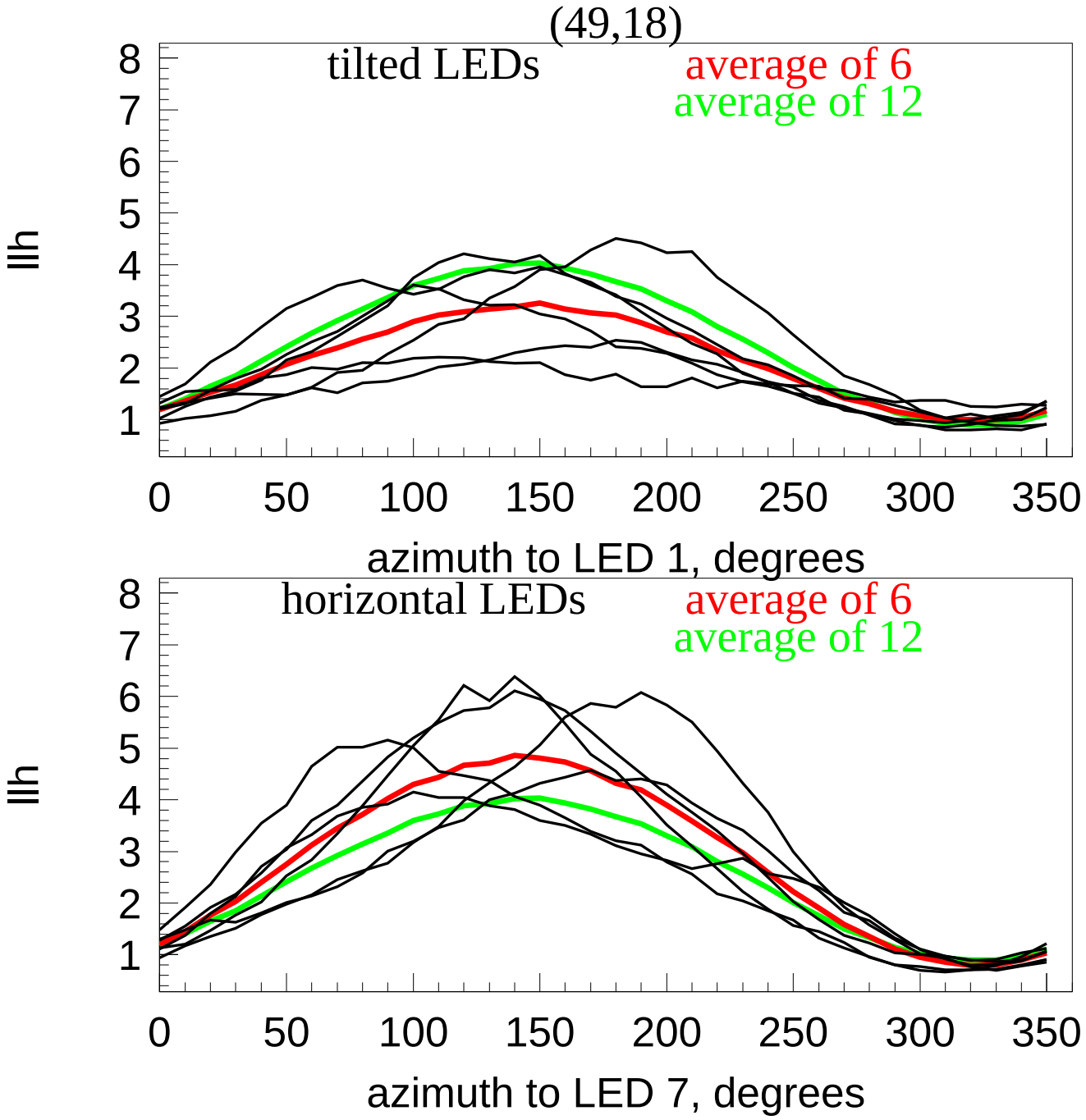

(48,15)
7
12
6
8
2
90
5
3
11
4
9
10
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

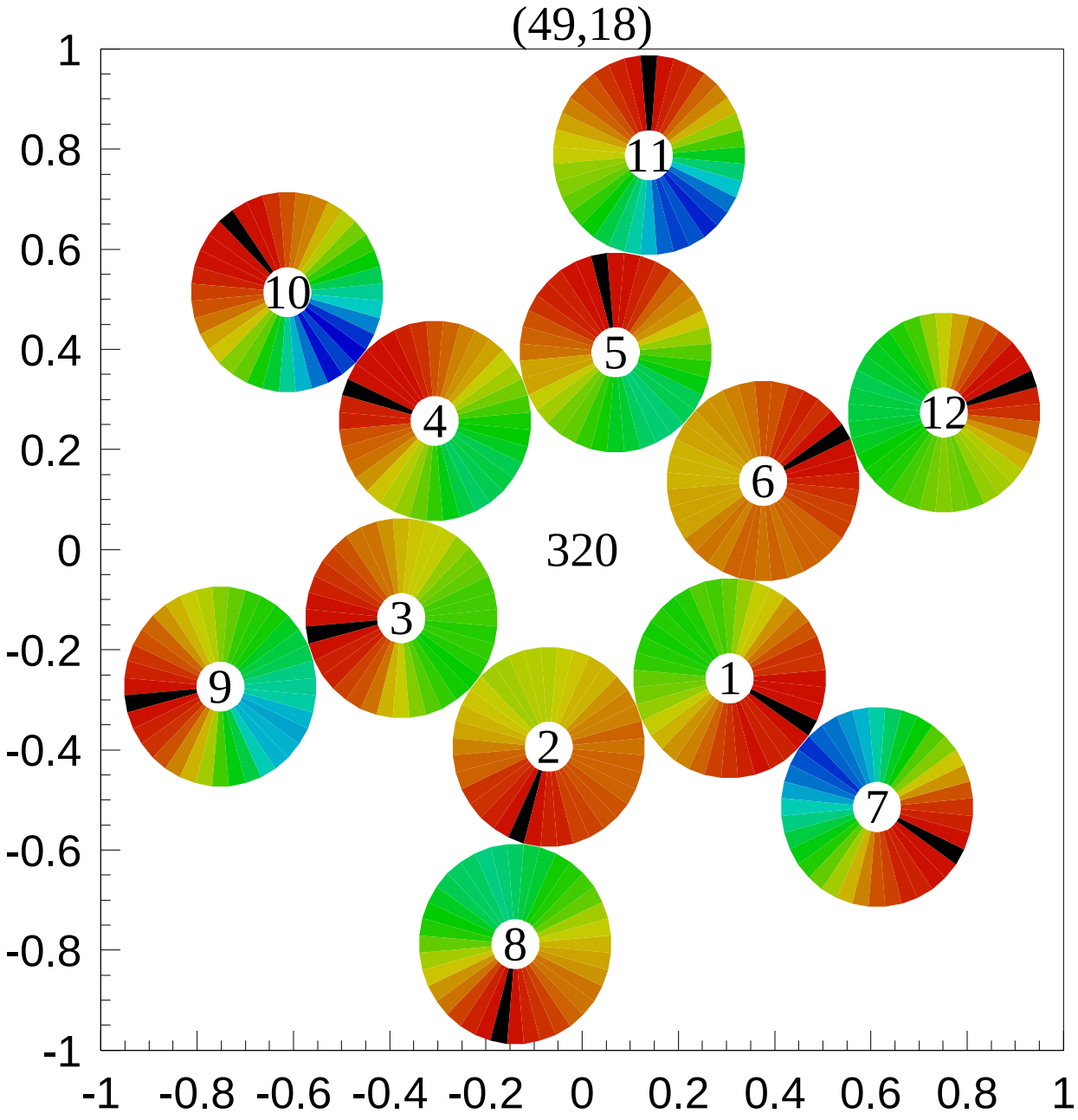

(48,46)
tilted LEDs
average of 6
average of 12
16
14
12
10
8
6
4
2
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
16
14
12
10
8
6
4
2
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

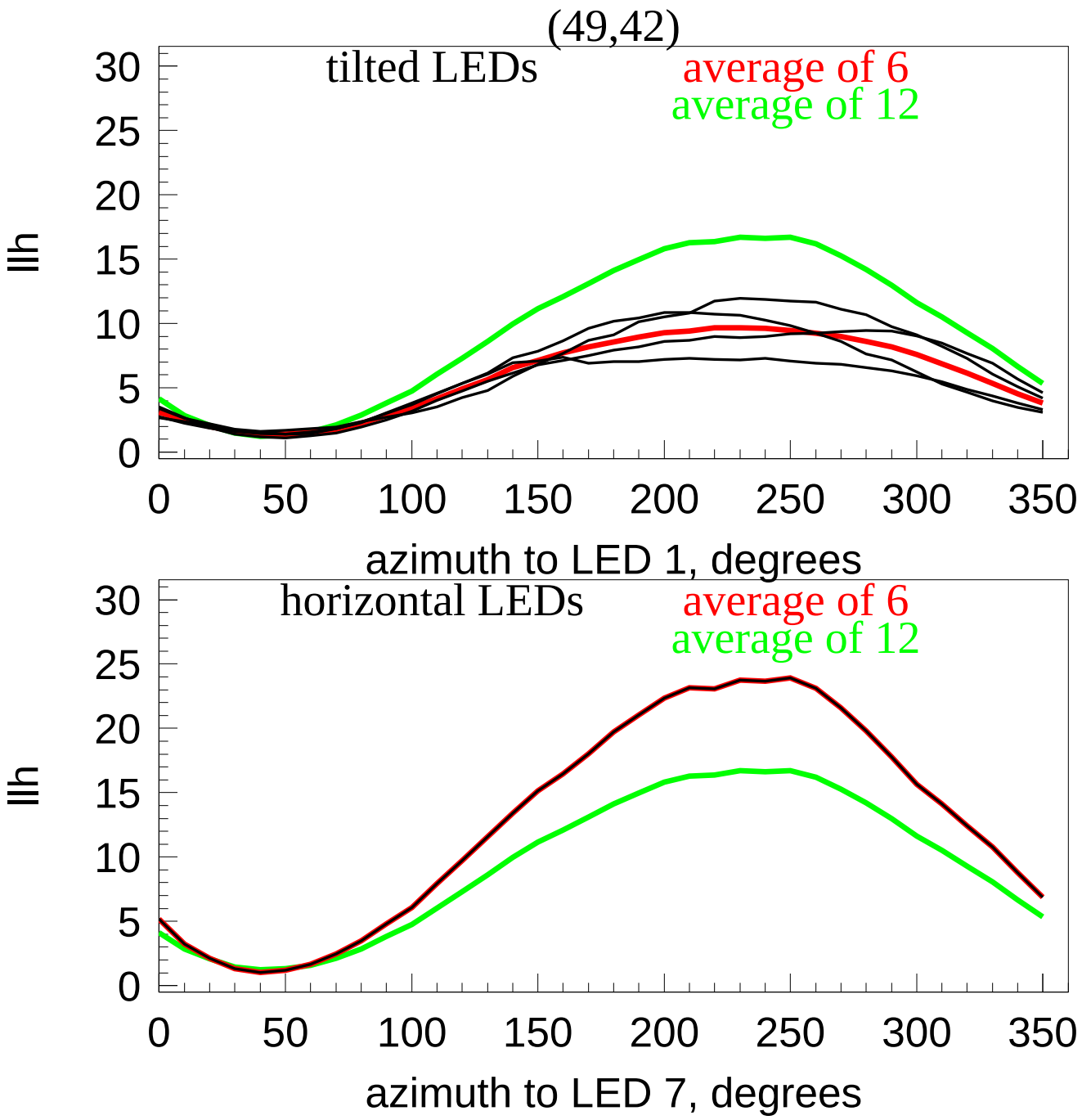

(48,46)
11
5
310
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

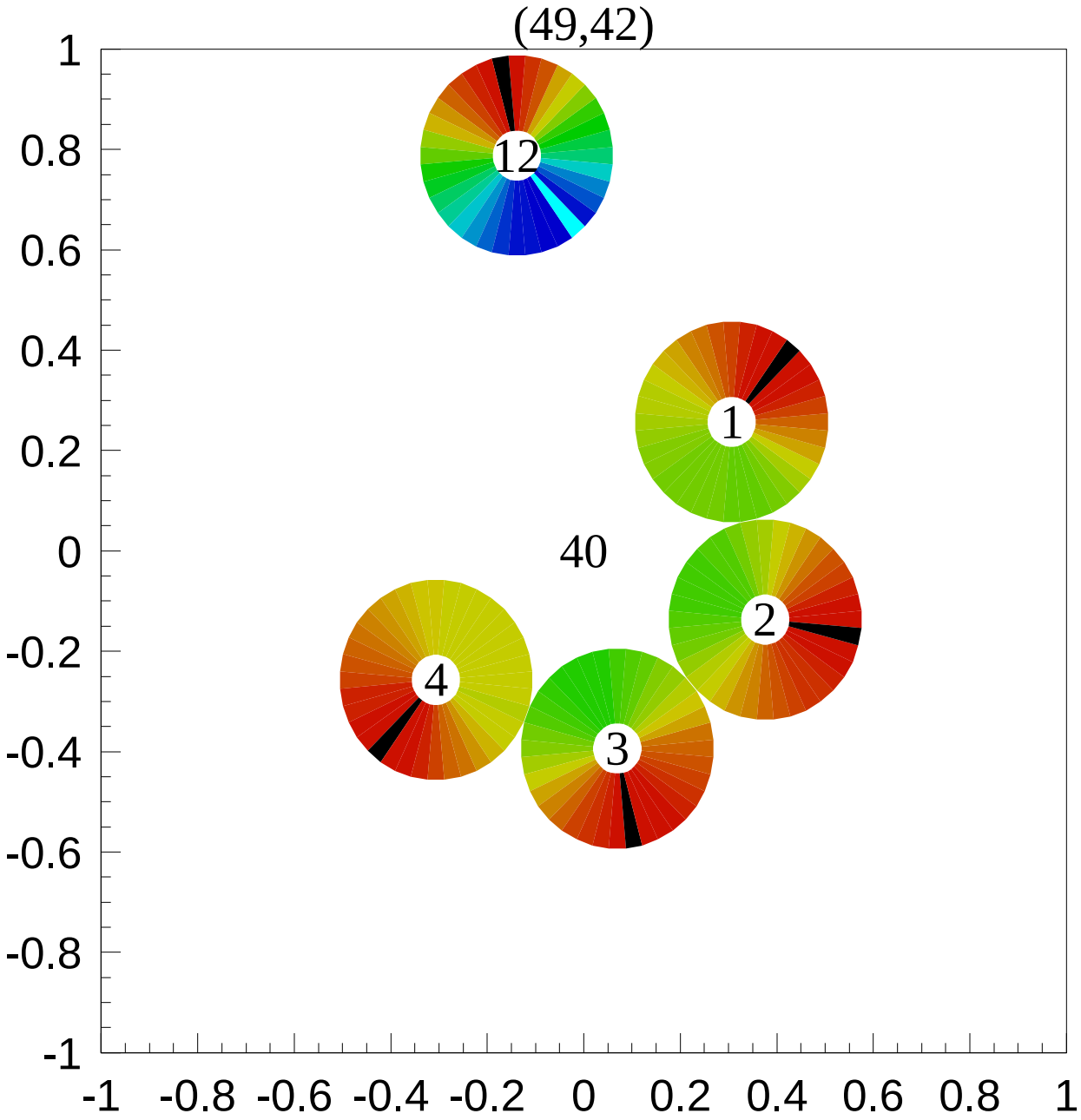

(49,8)
tilted LEDs
average of 6
average of 12
Ilh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

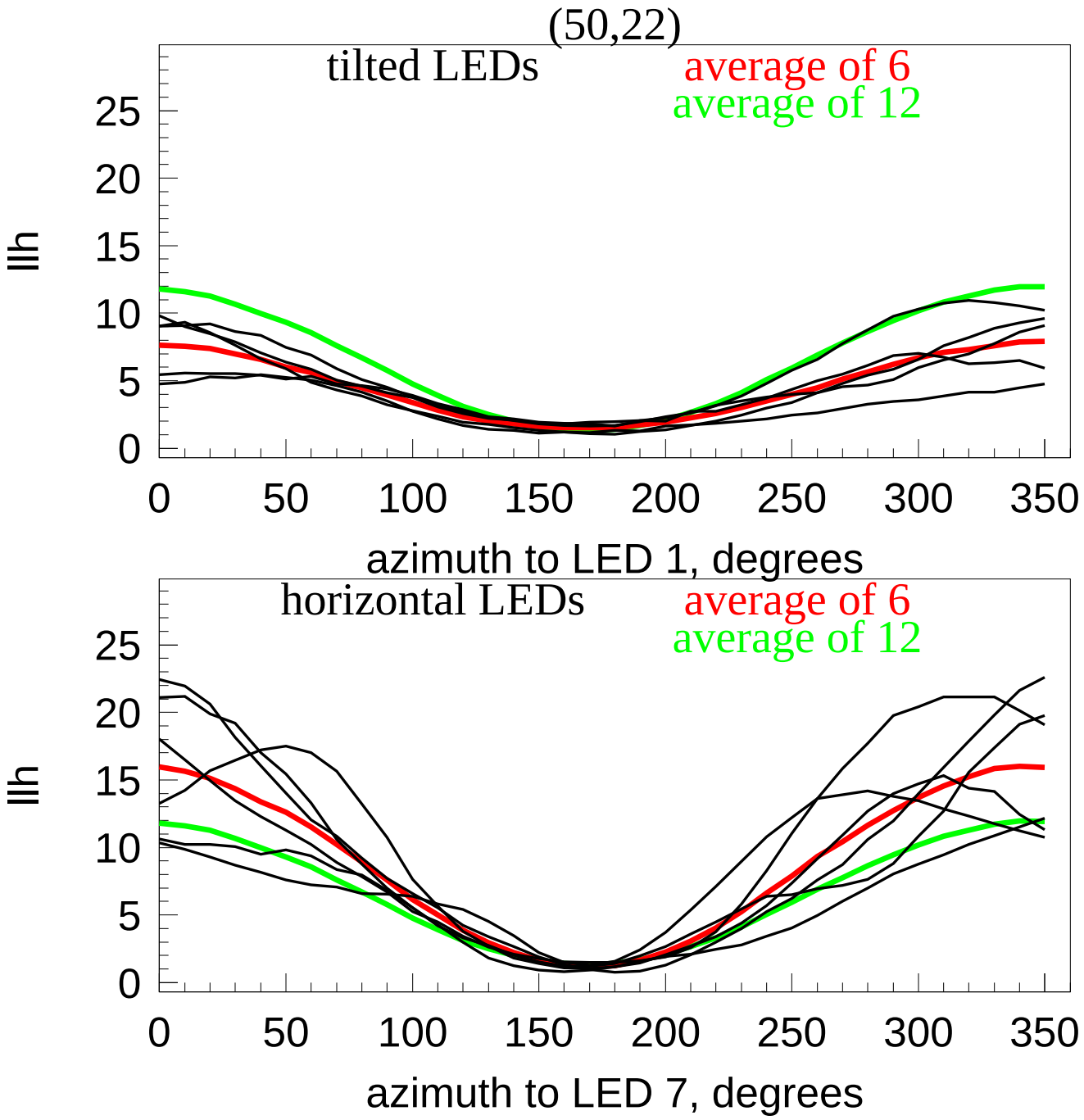

(49,8)
12
7
6
11
5
60
4
3
10
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

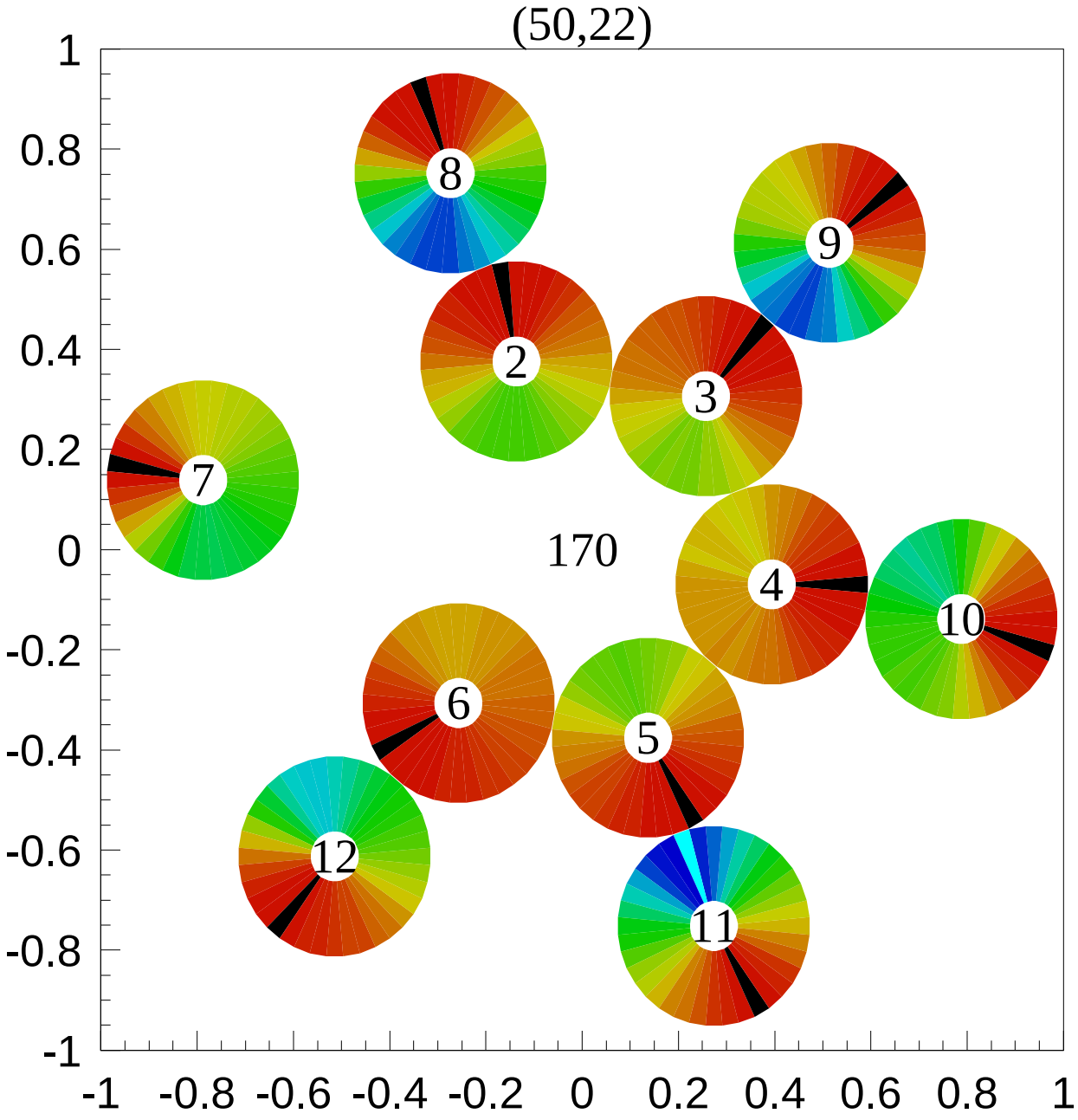

(49,18)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

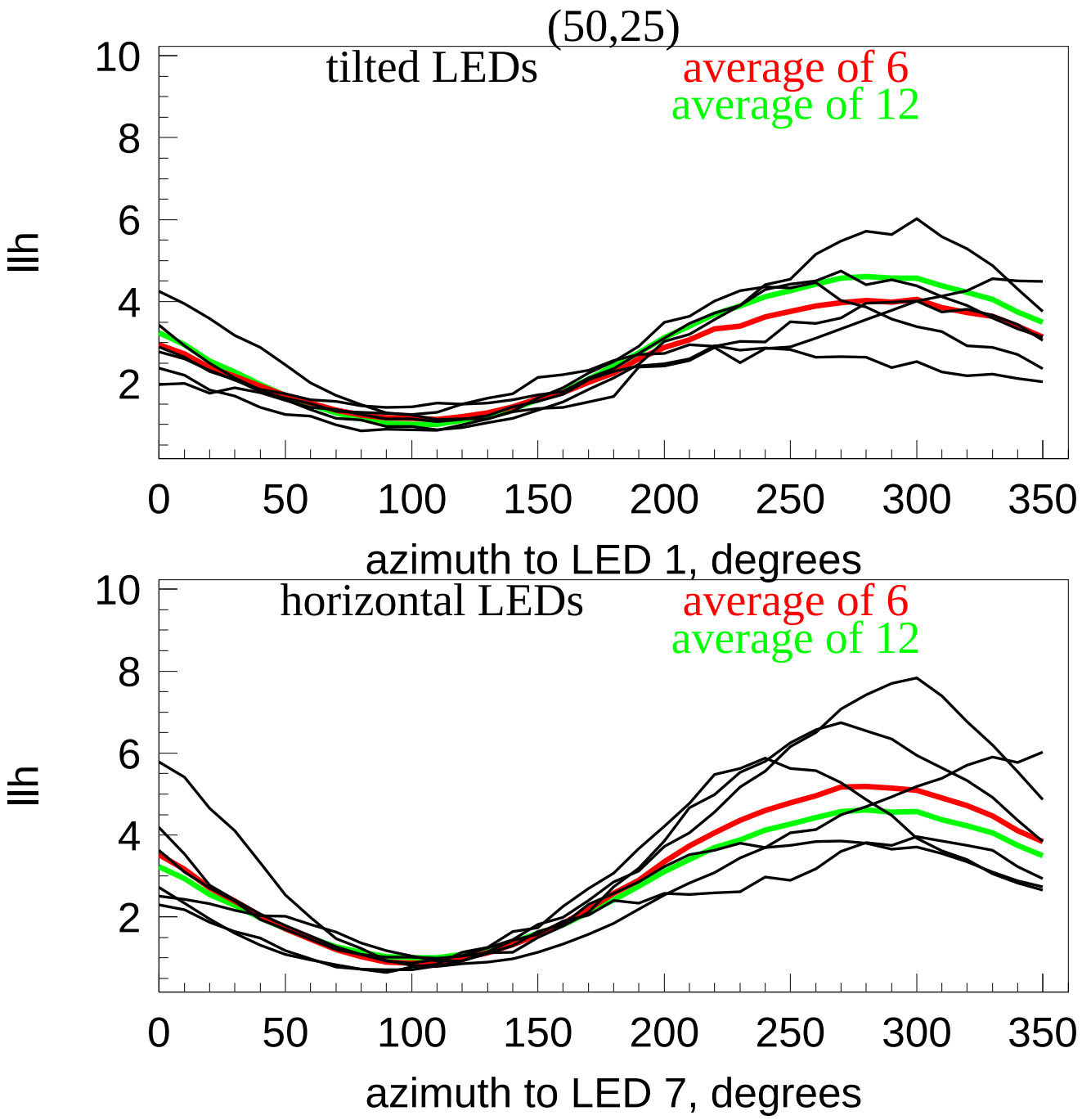

(49,18)
320
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

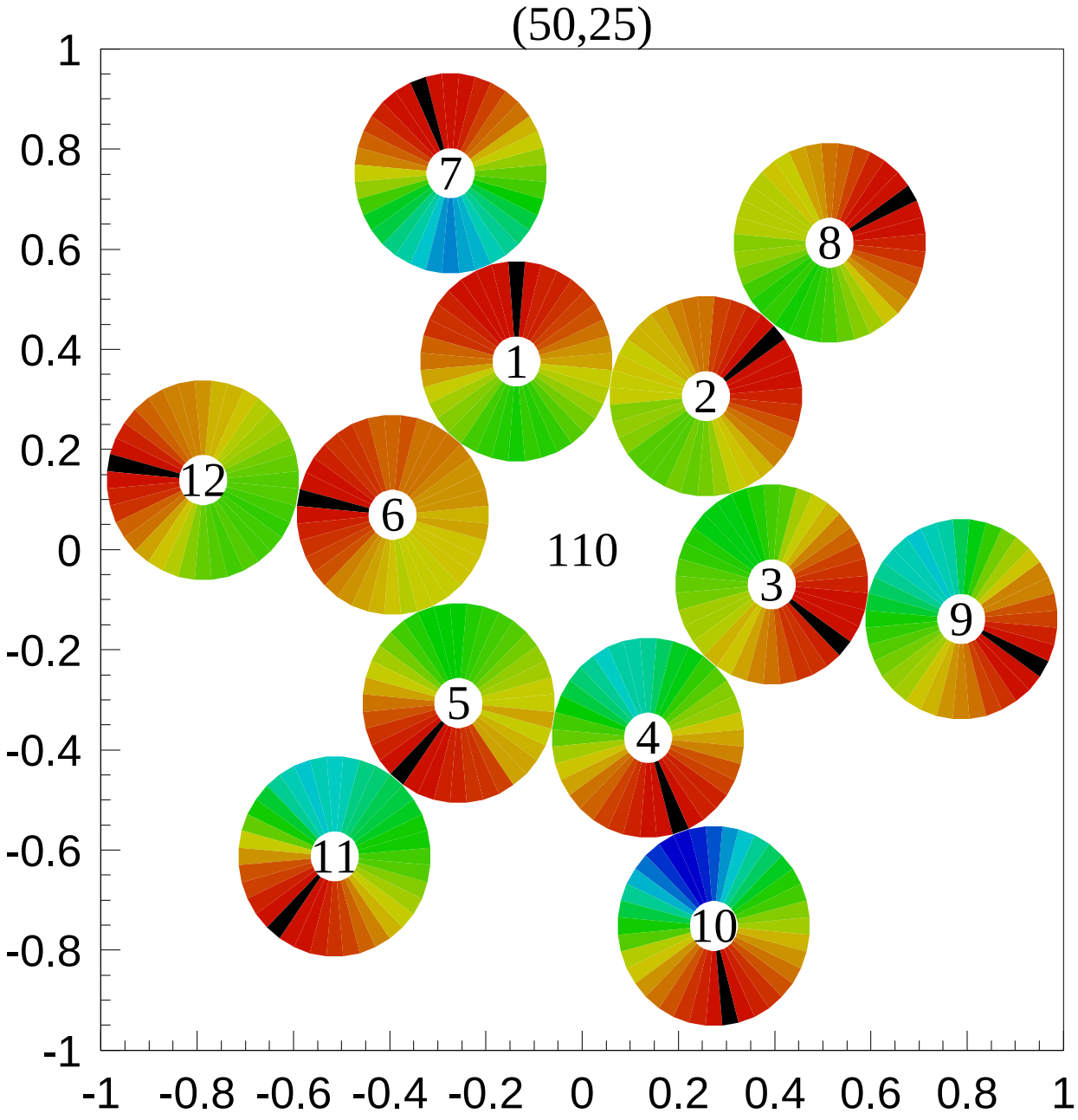

(49,42)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

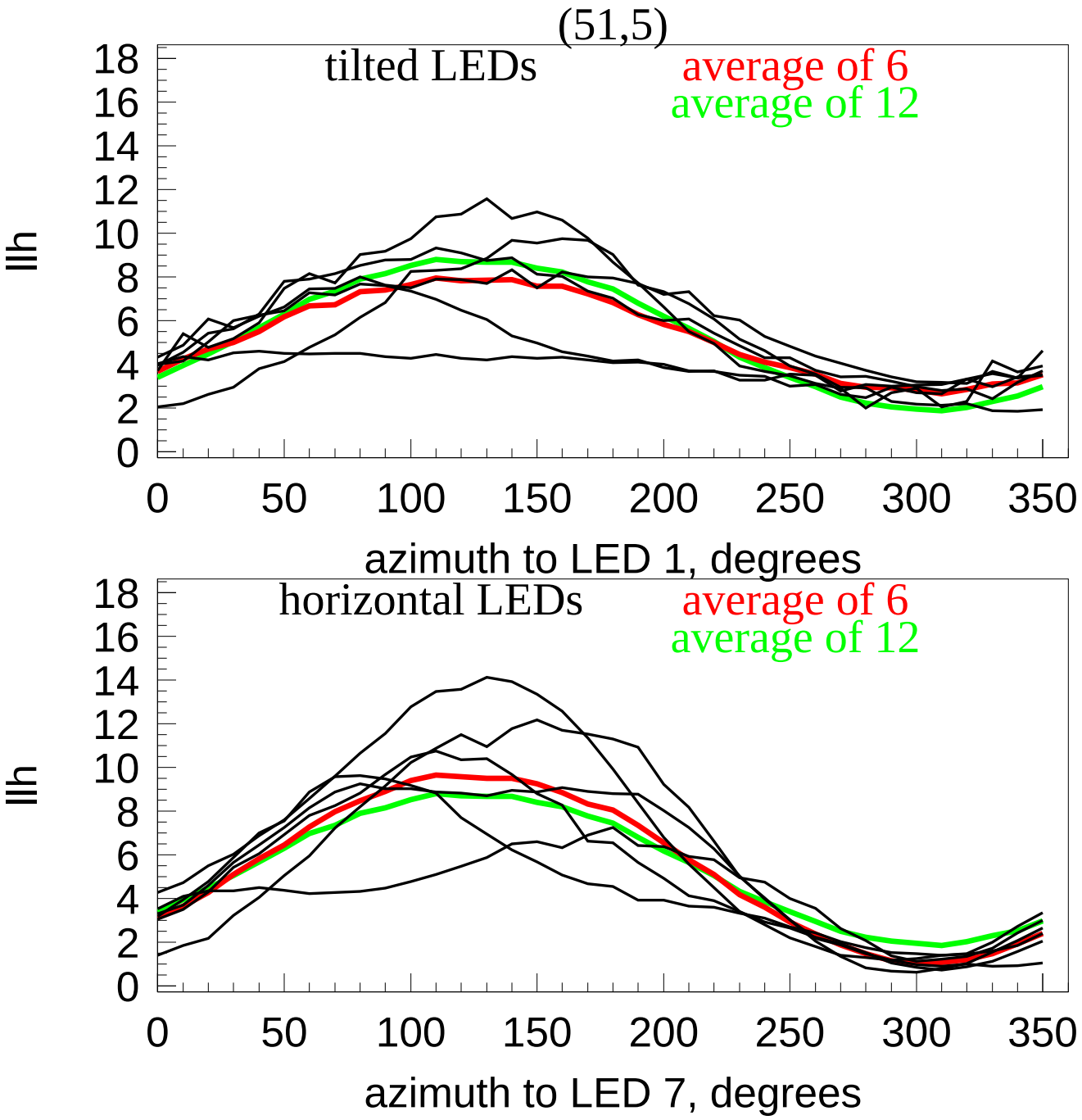

(49,42)
12
1
40
2
4
3
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

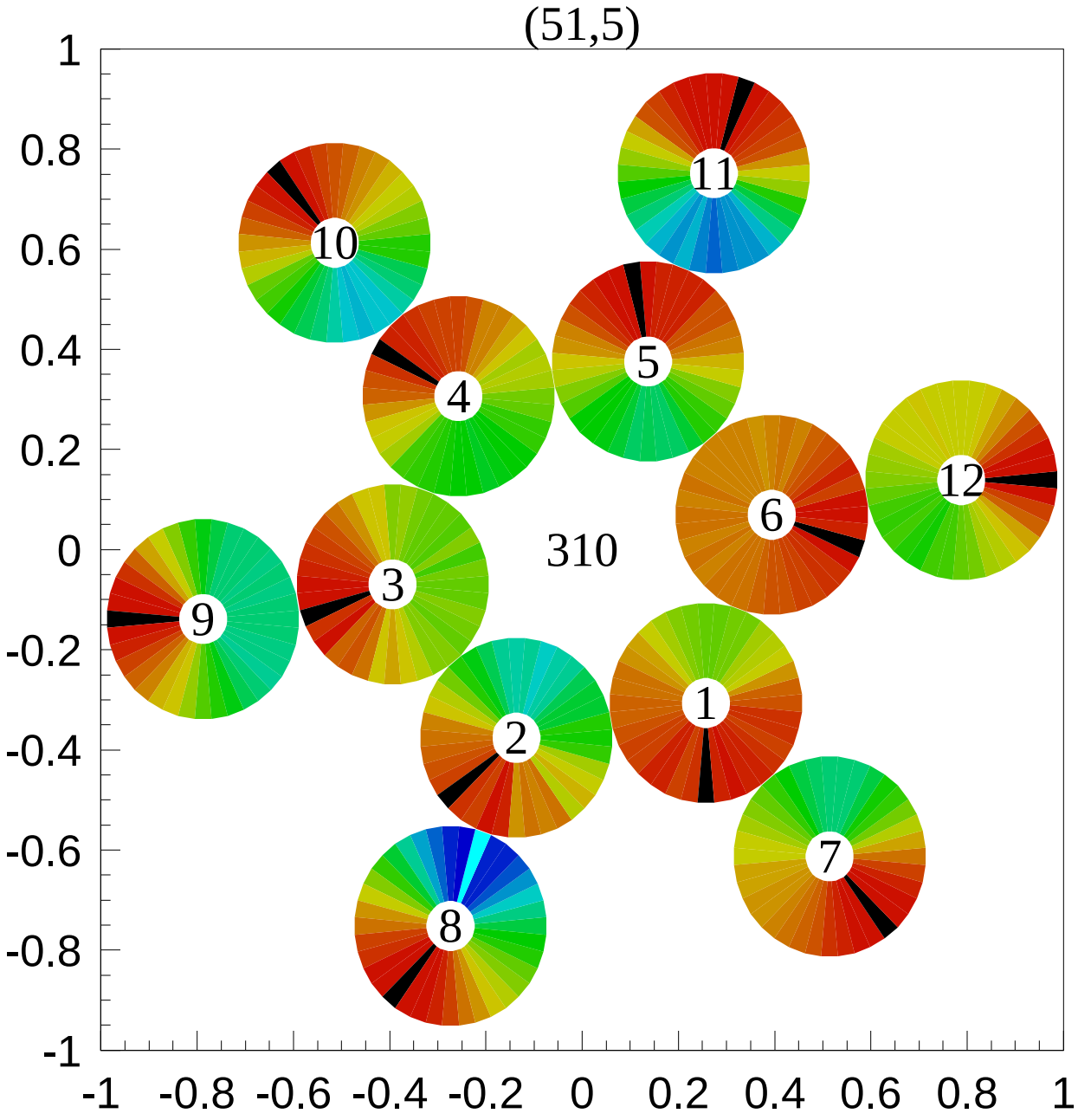

(50,22)
tilted LEDs
average of 6
average of 12
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

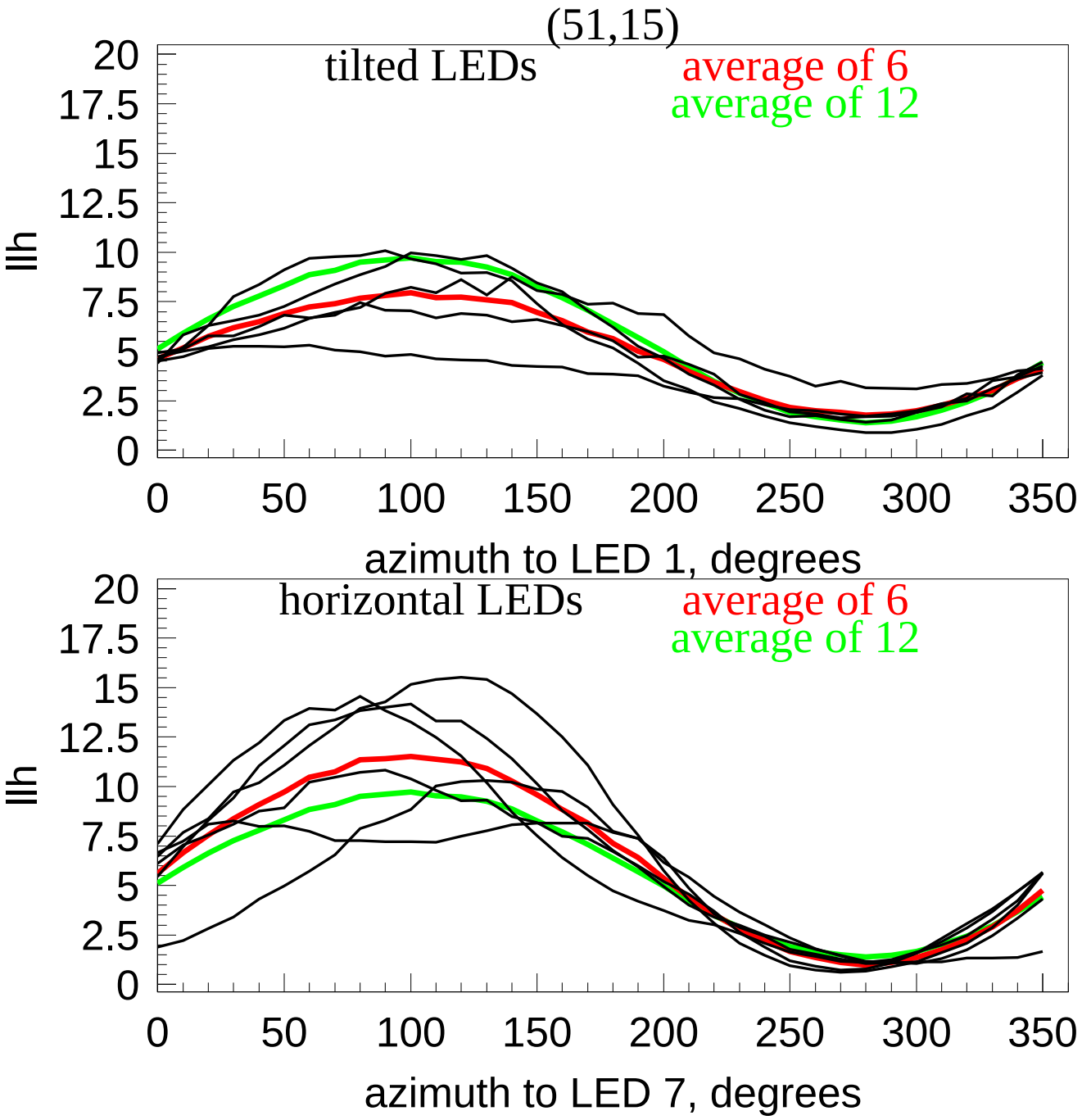

(50,22)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
9
2
3
7
170
4
10
6
5
12
11

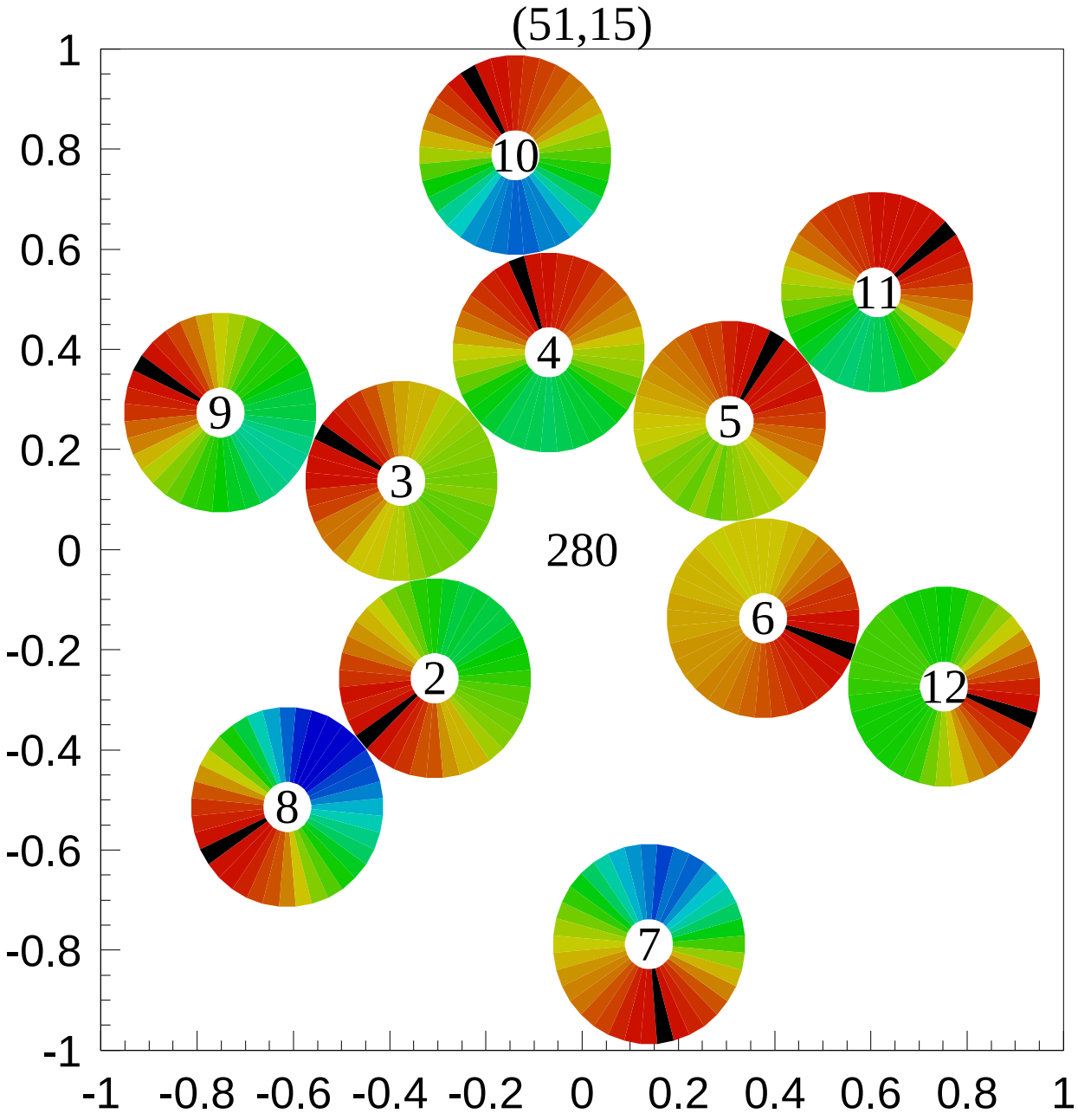

(50,25)
tilted LEDs
average of 6
average of 12
Ilh
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

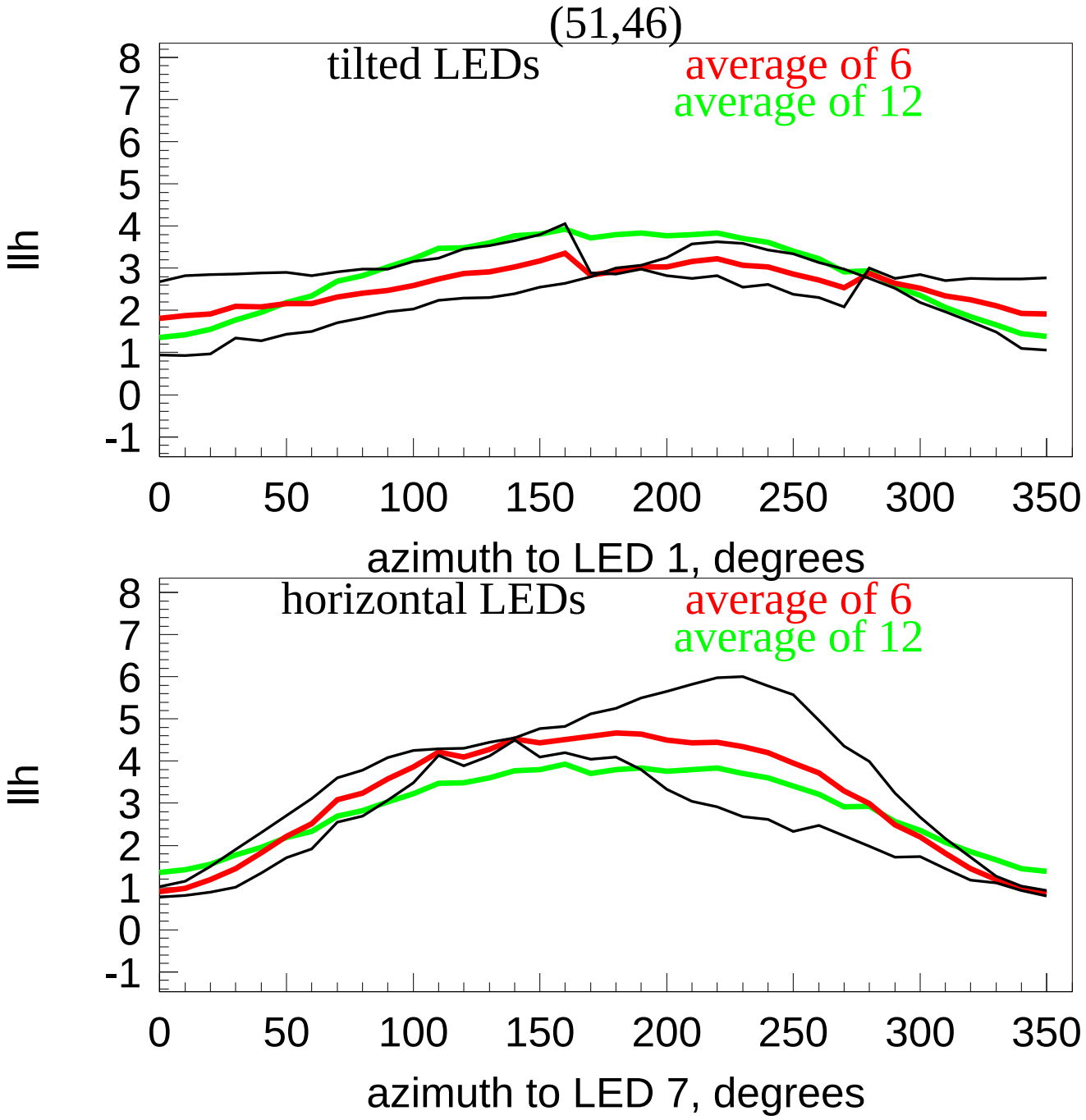

(50,25)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
1
2
12
6
110
3
9
5
4
11
10

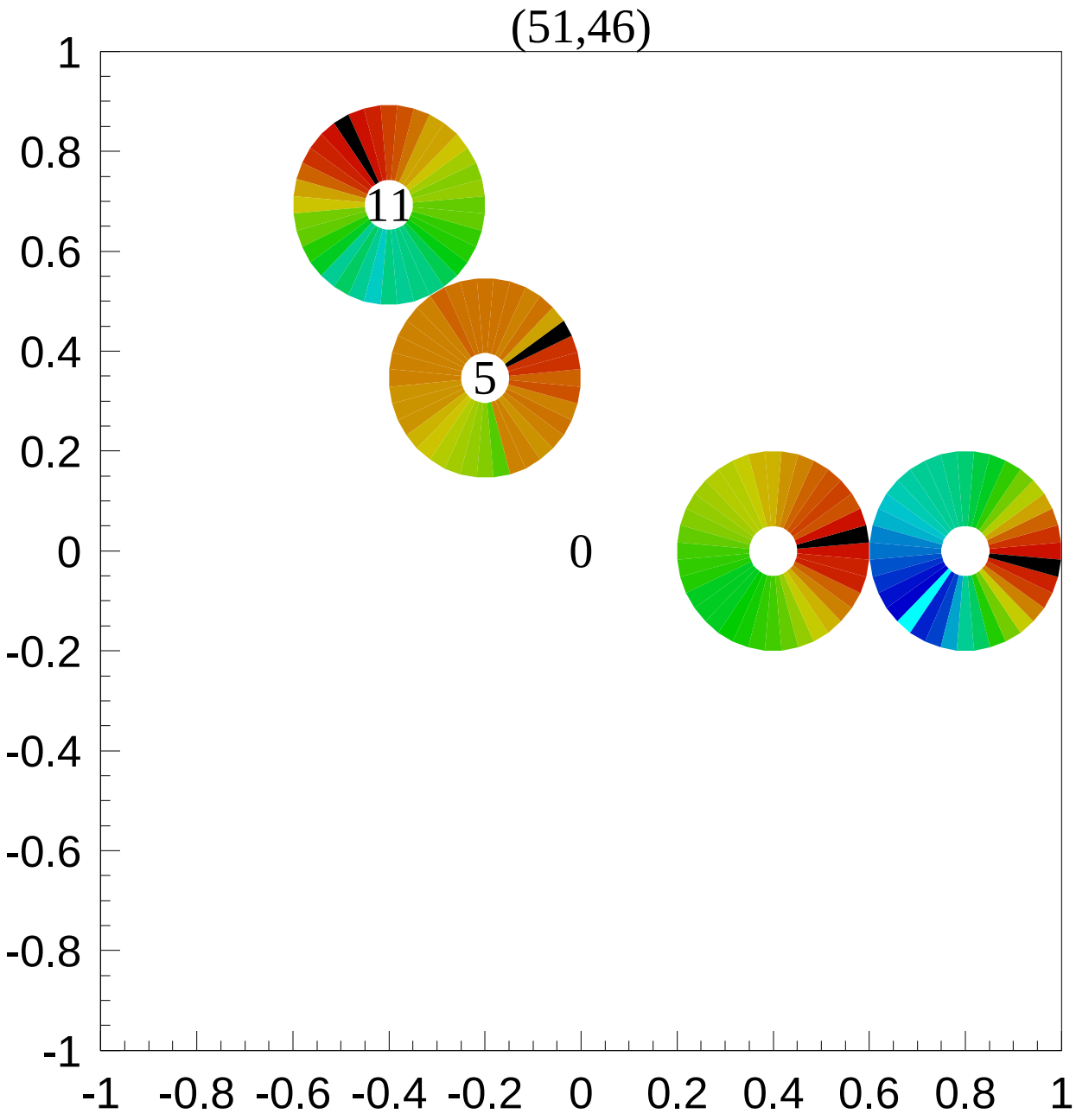

(51,5)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

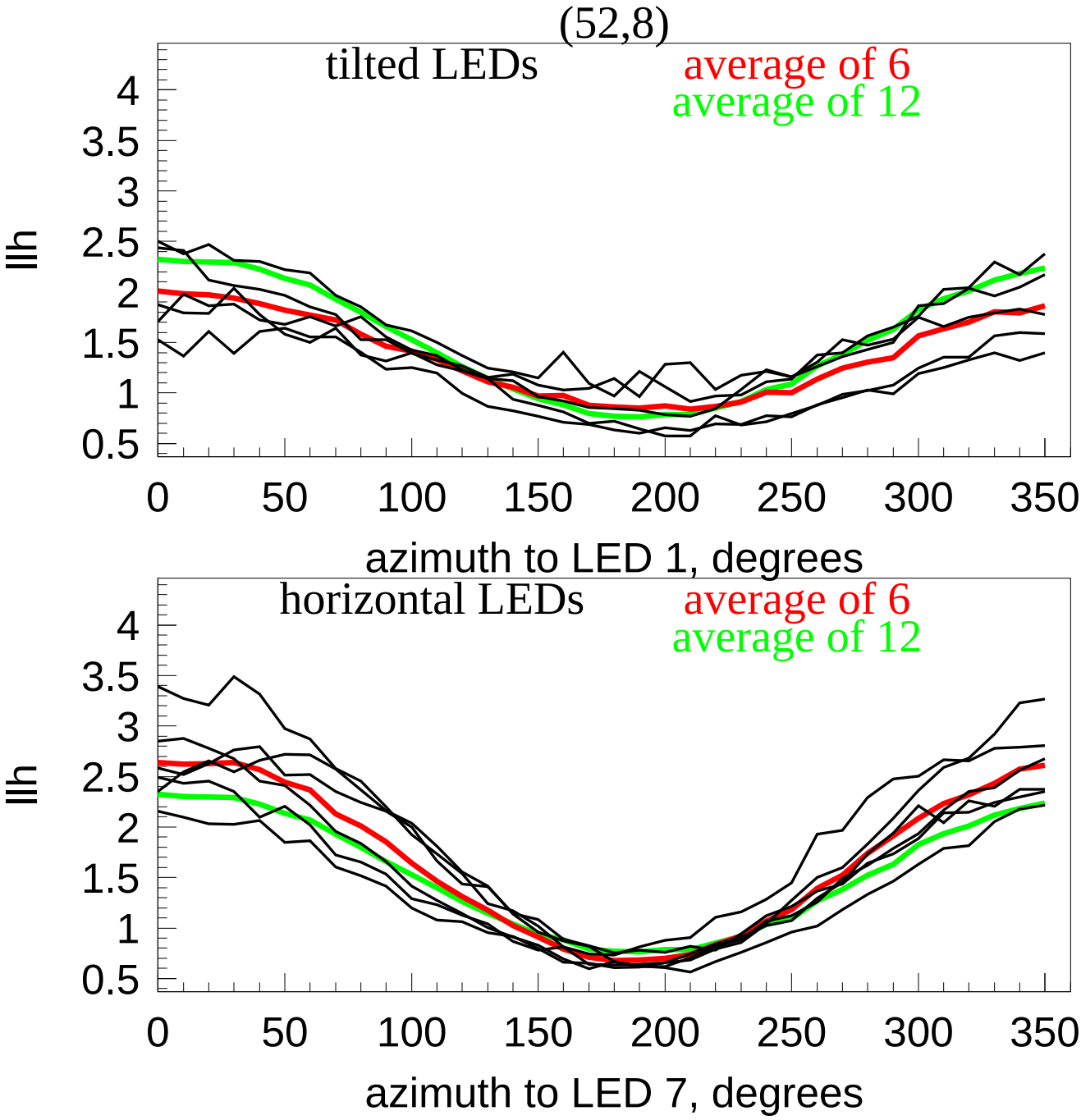

(51,5)
310
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

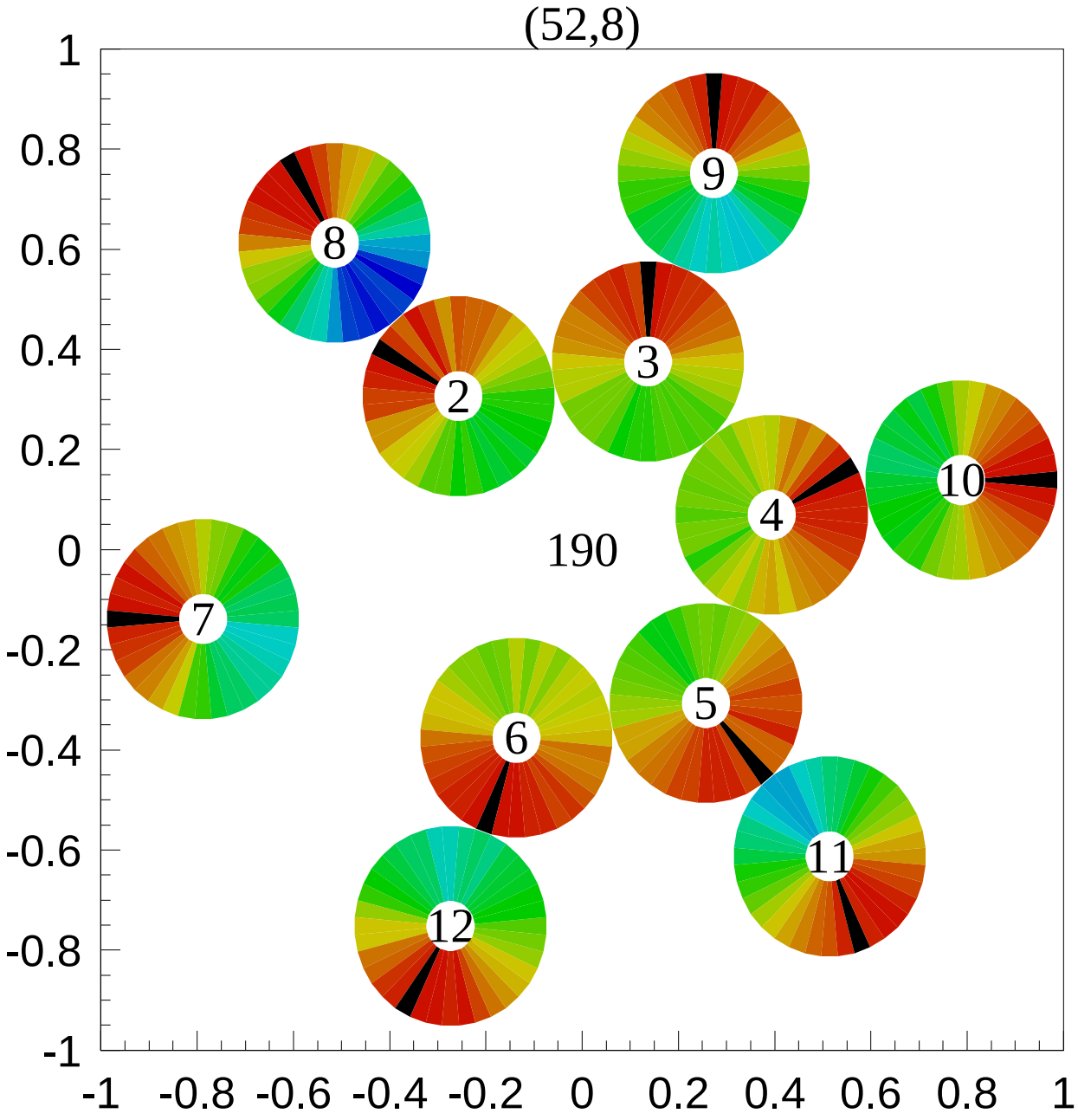

(51,15)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

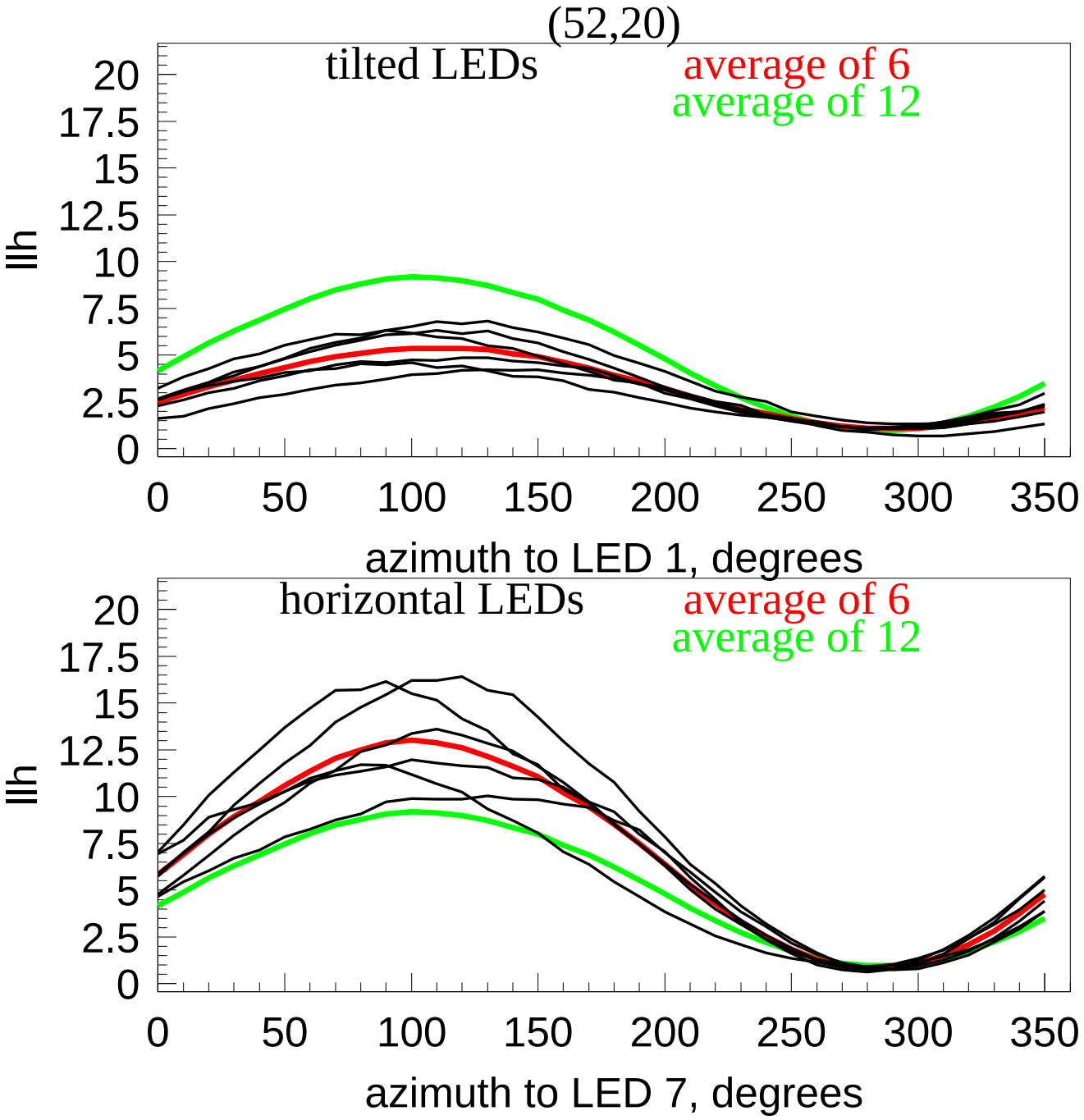

(51,15)
10
4
11
9
3
5
280
6
12
2
8
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

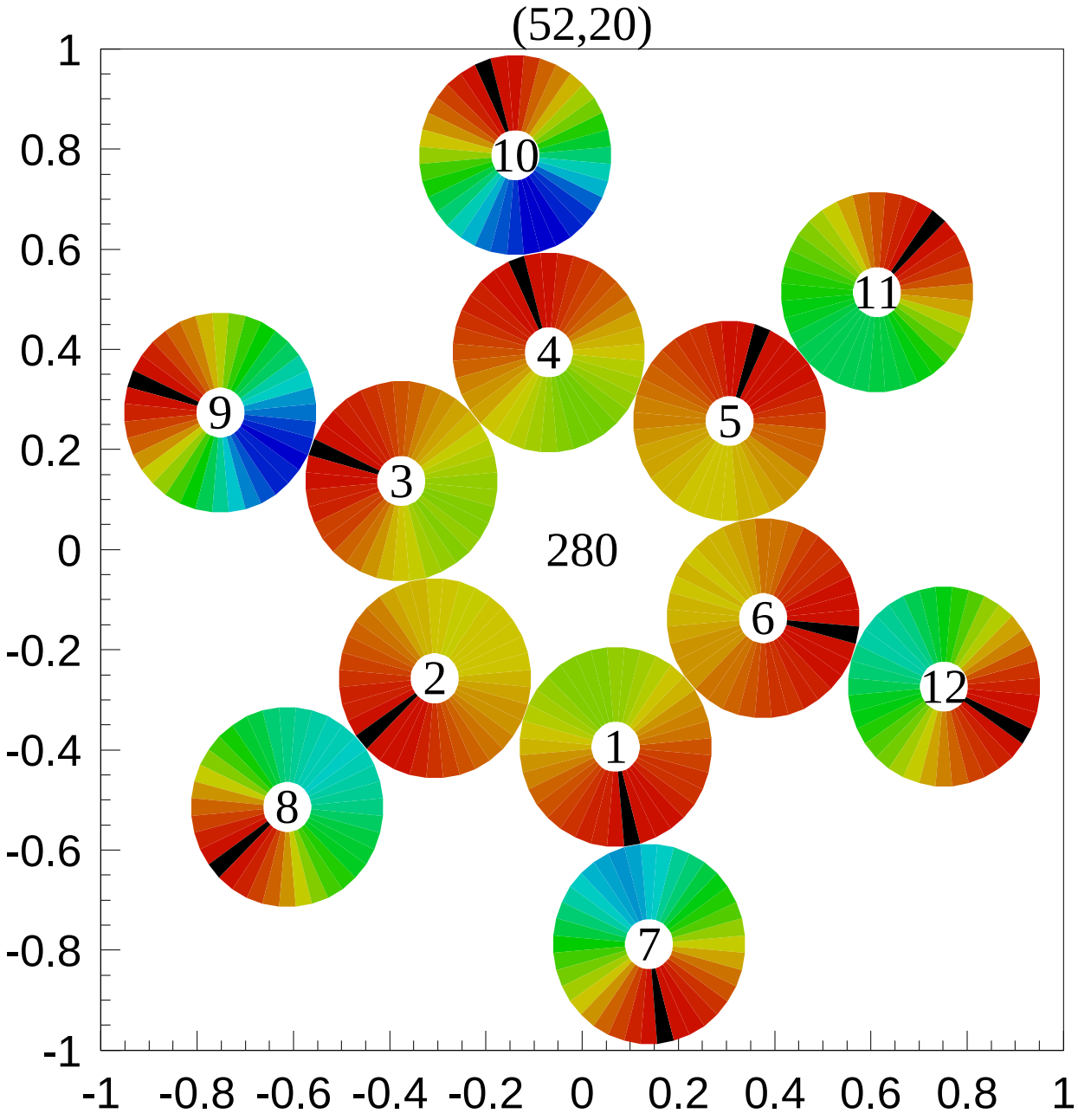

(51,46)
tilted LEDs
average of 6
average of 12
llh
8
7
6
5
4
3
2
1
0
-1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

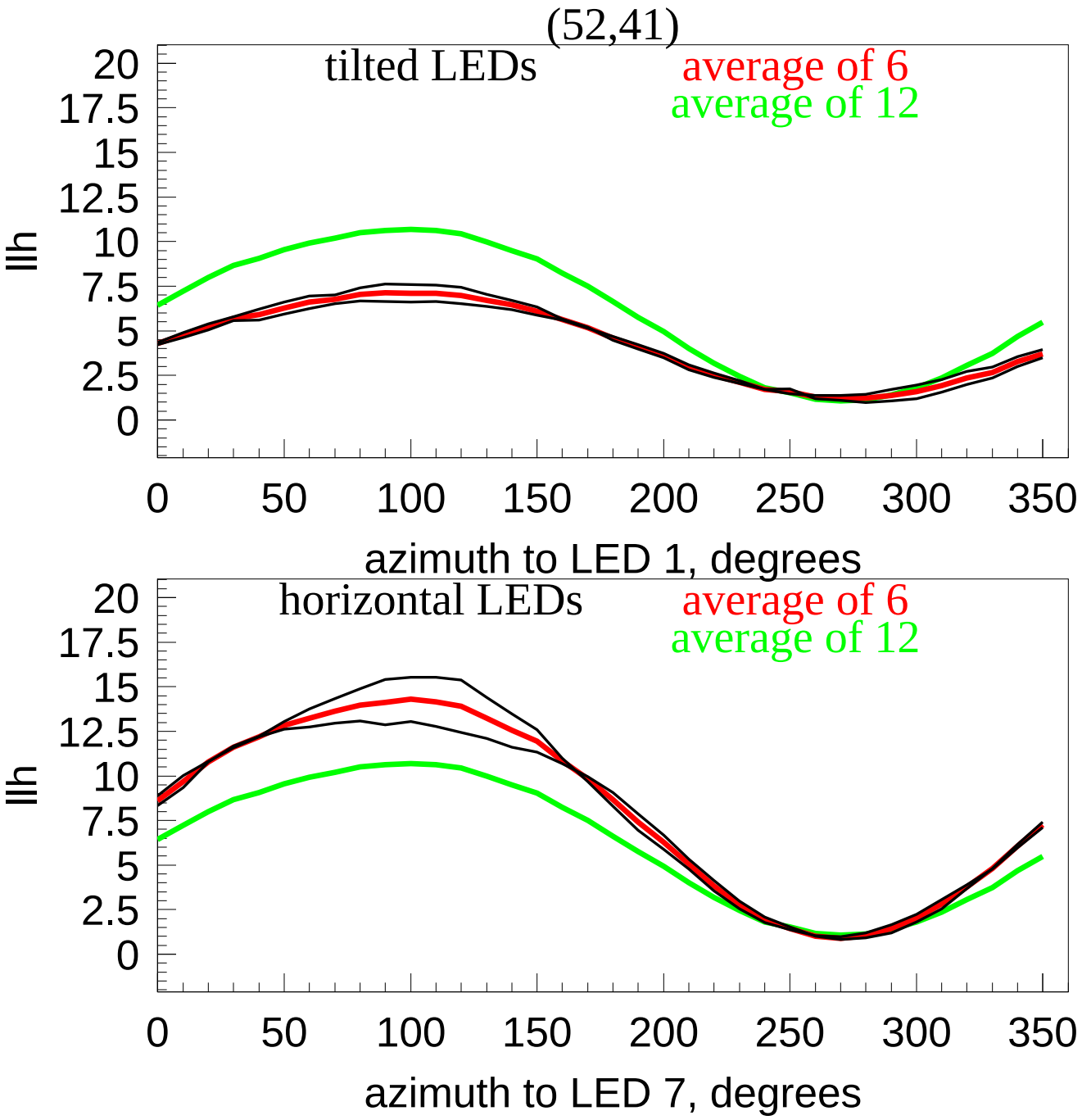

(51,46)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
0

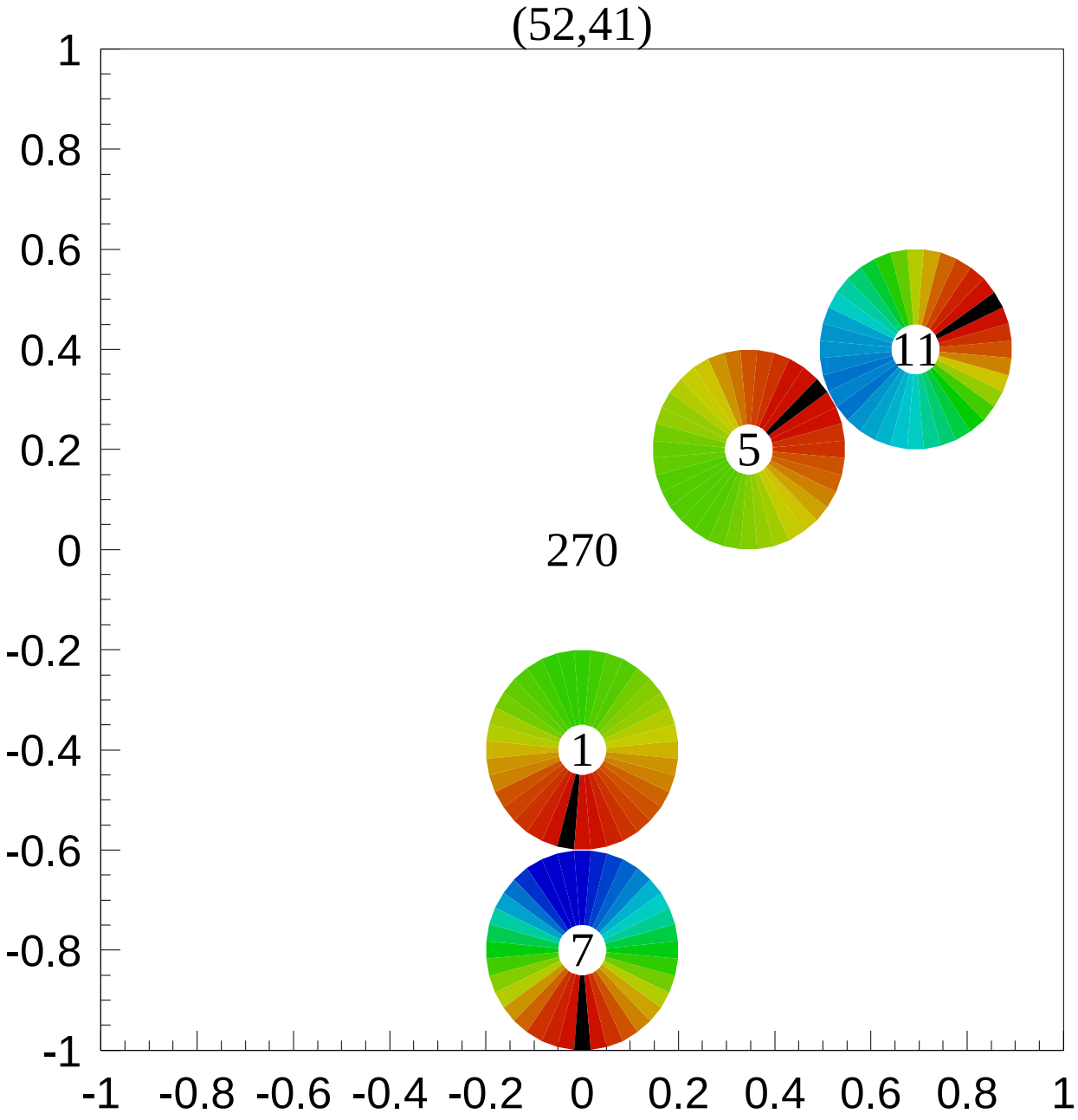

(52,8)
tilted LEDs
average of 6
average of 12
llh
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

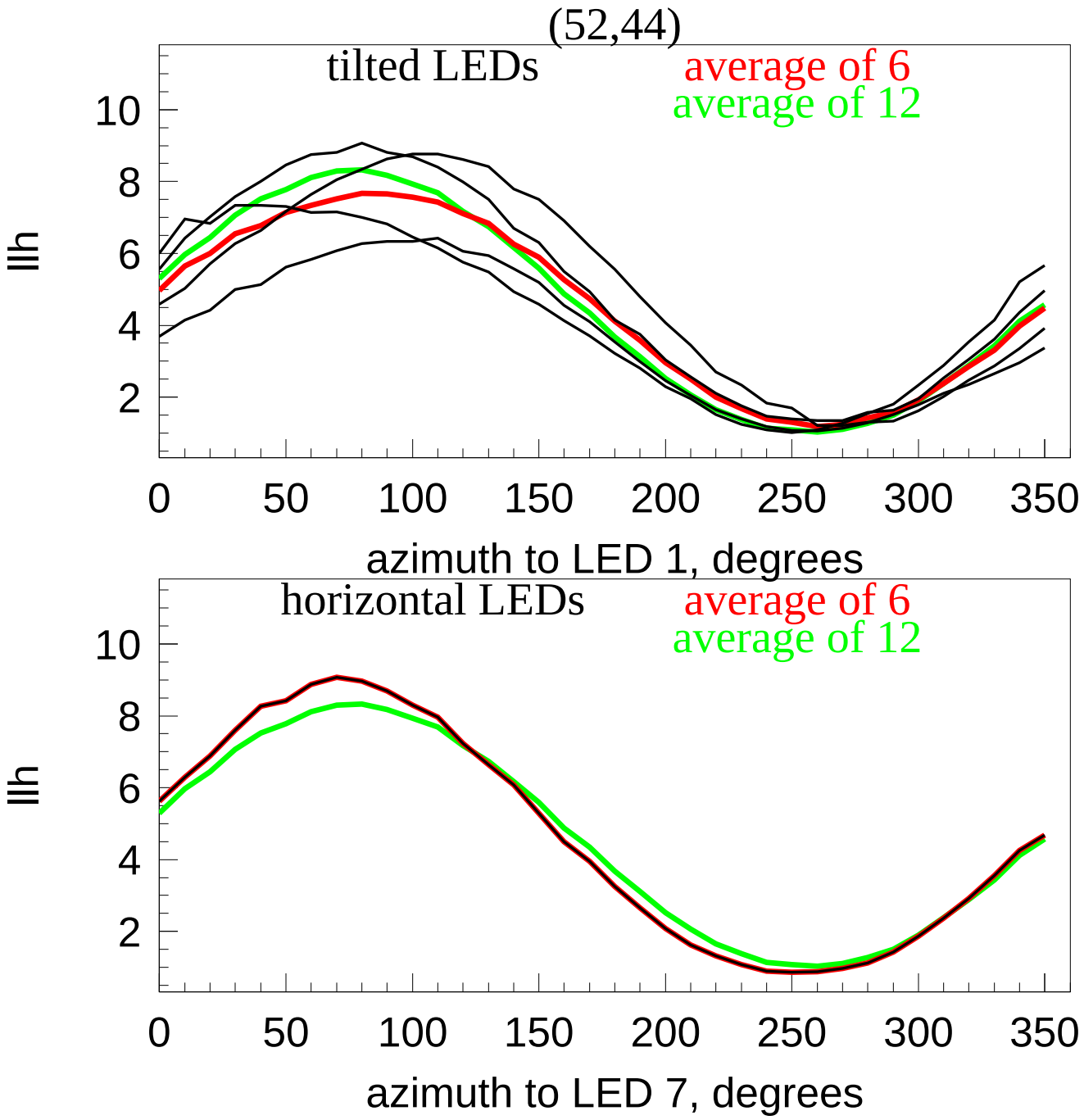

(52,8)
190
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

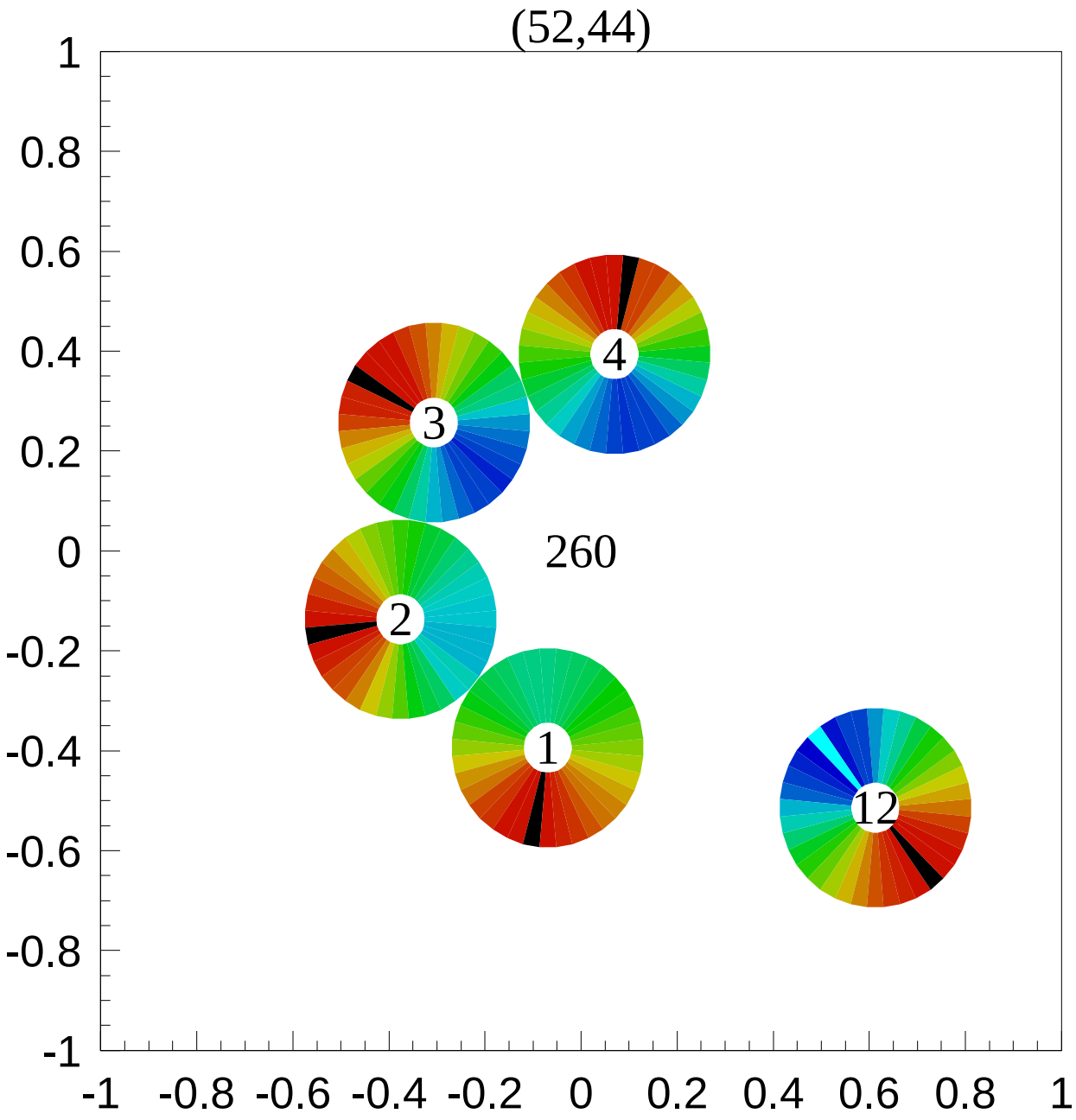

(52,20)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

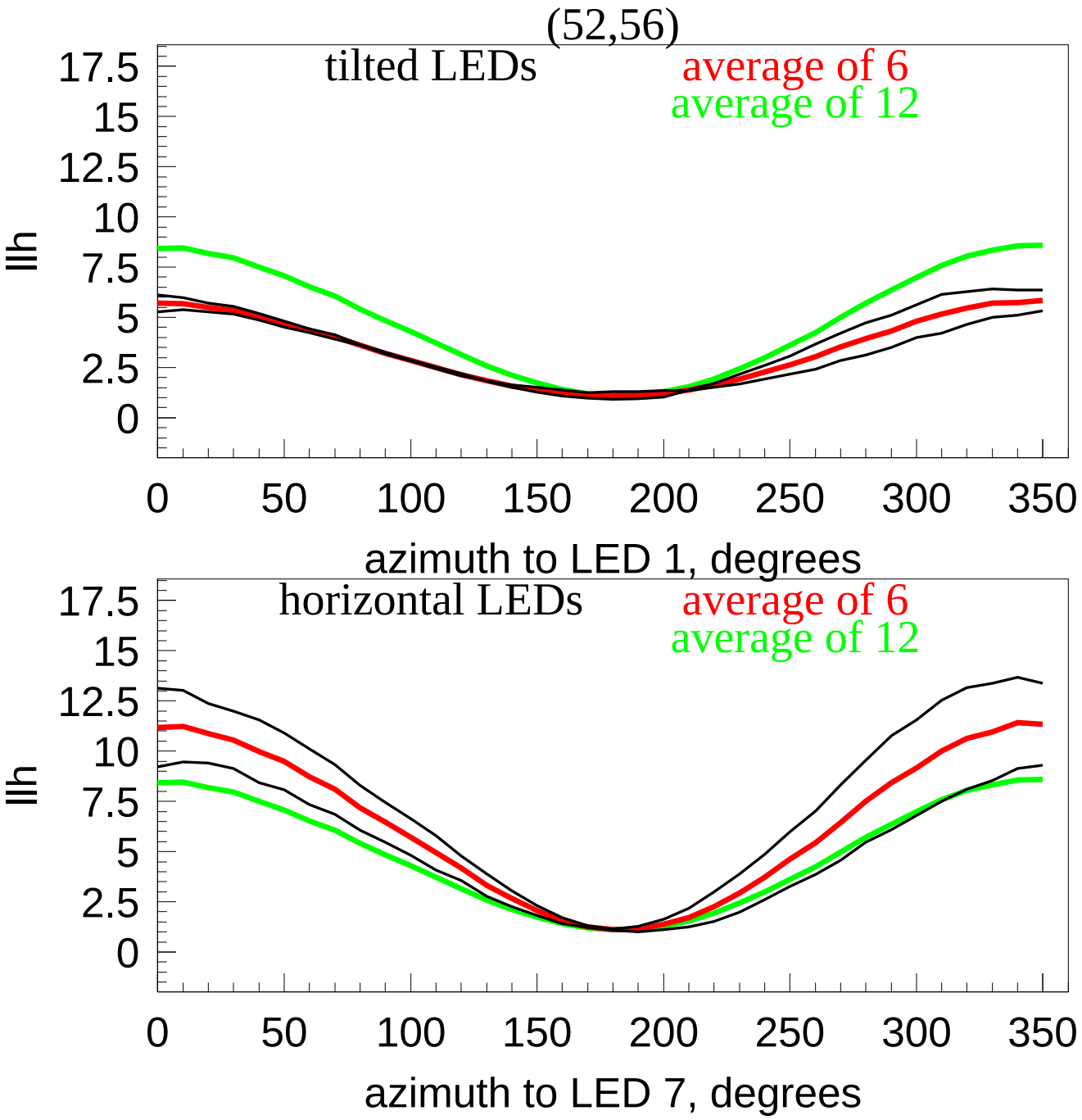

(52,20)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
11
4
9
5
3
280
6
12
2
1
8
7

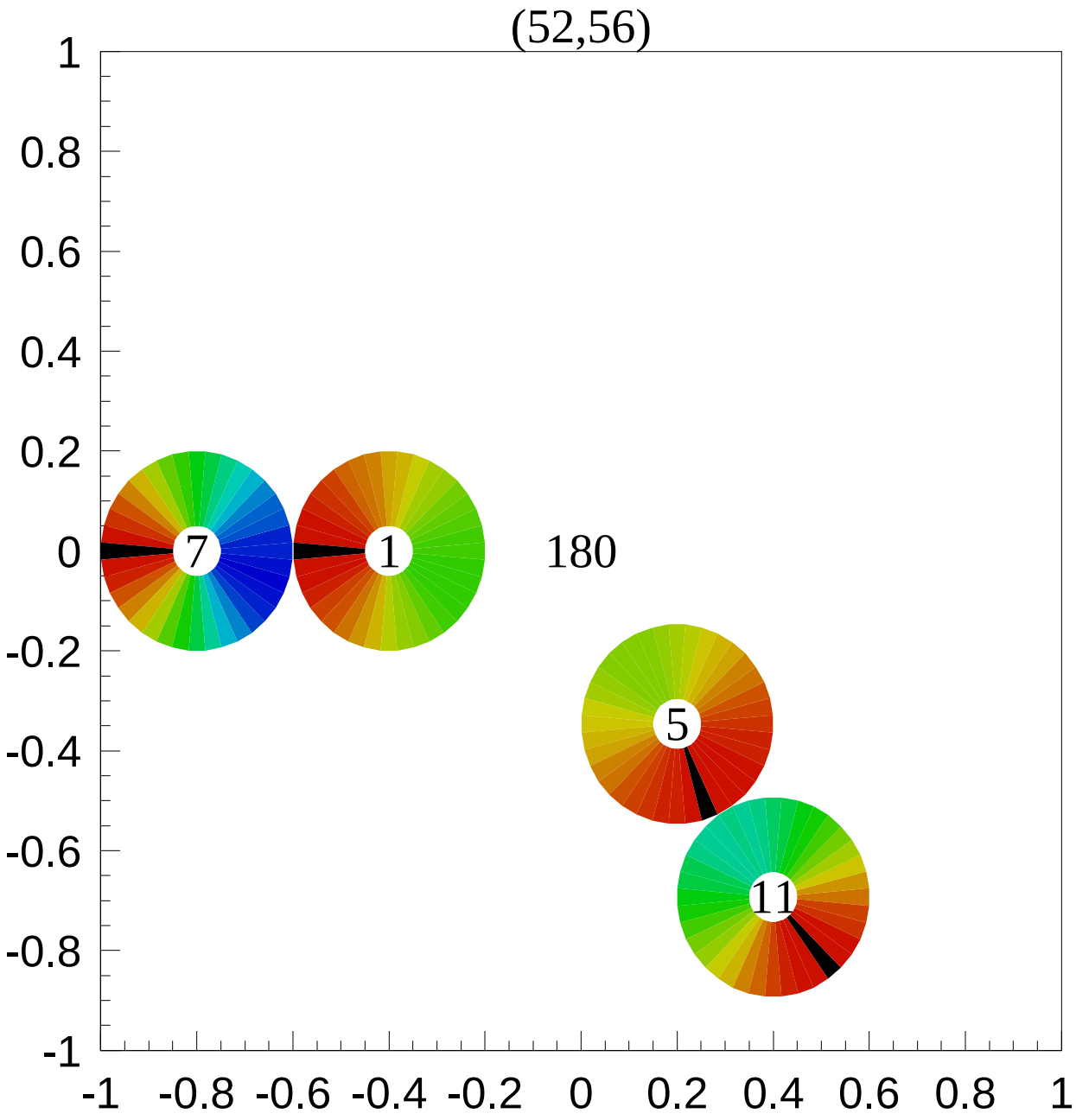

(52,41)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

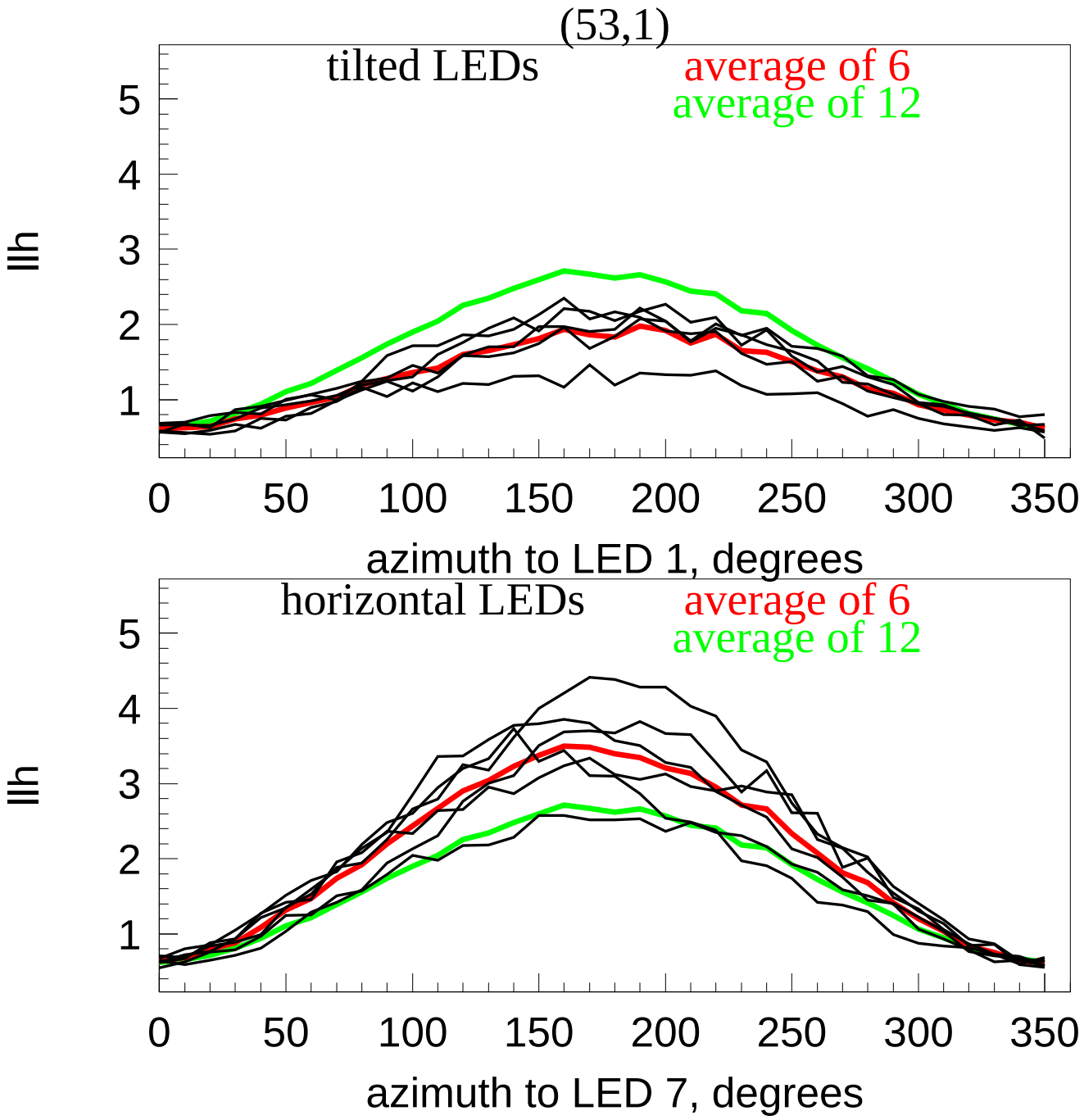

(52,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
270
1
7

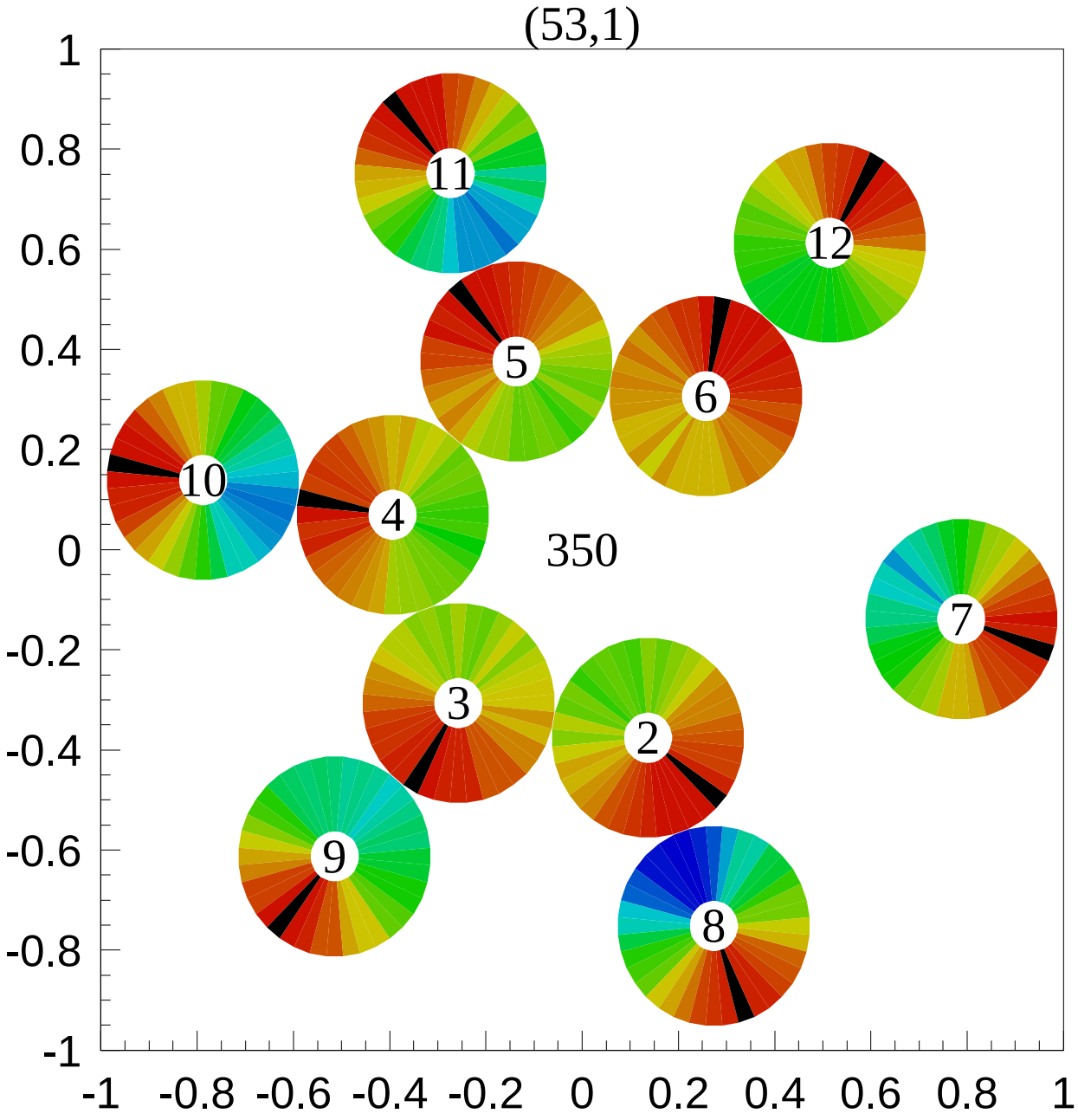

(52,44)
tilted LEDs
average of 6
average of 12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
10
8
6
4
2
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

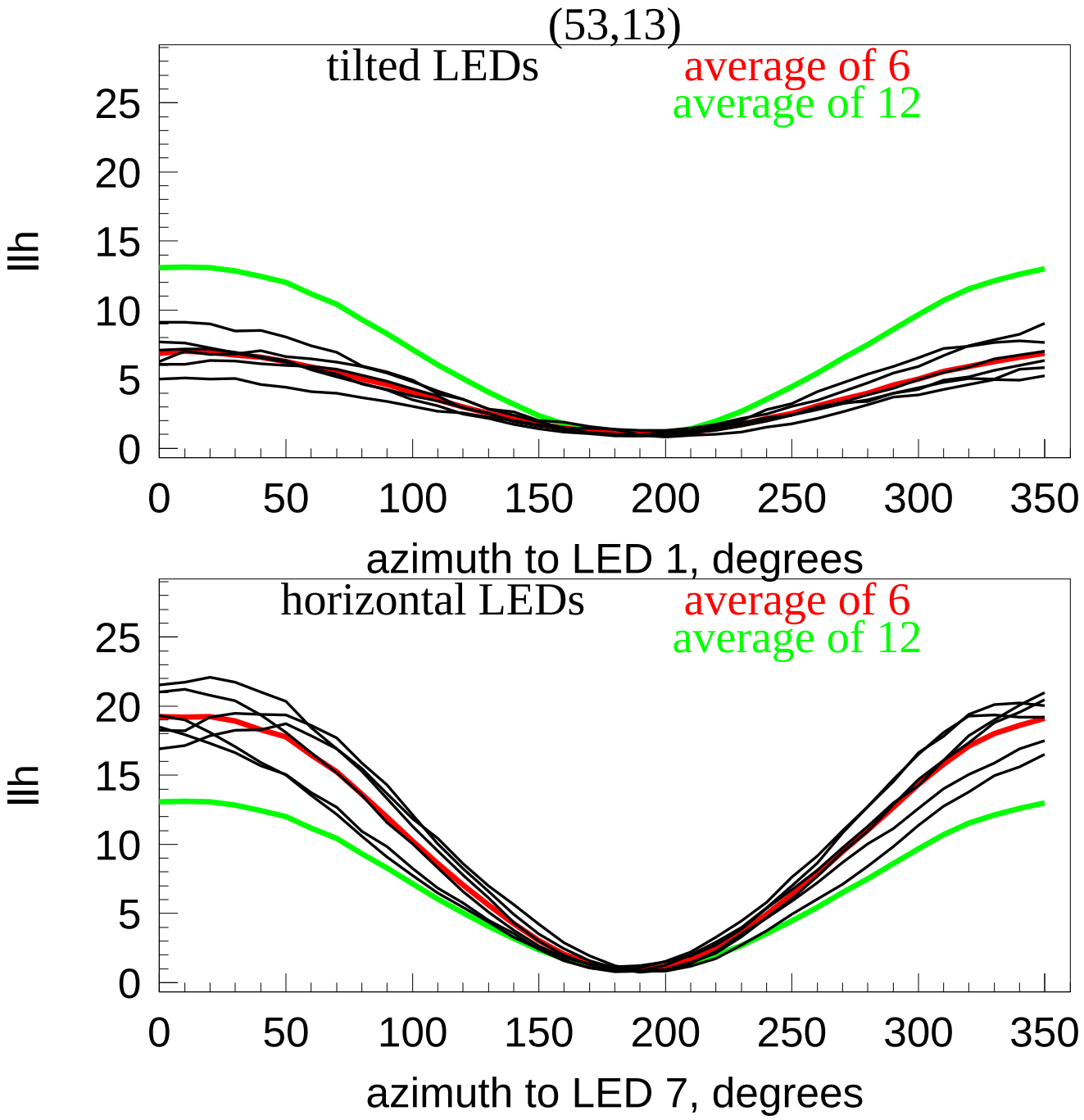

(52,44)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
4
3
260
2
1
12

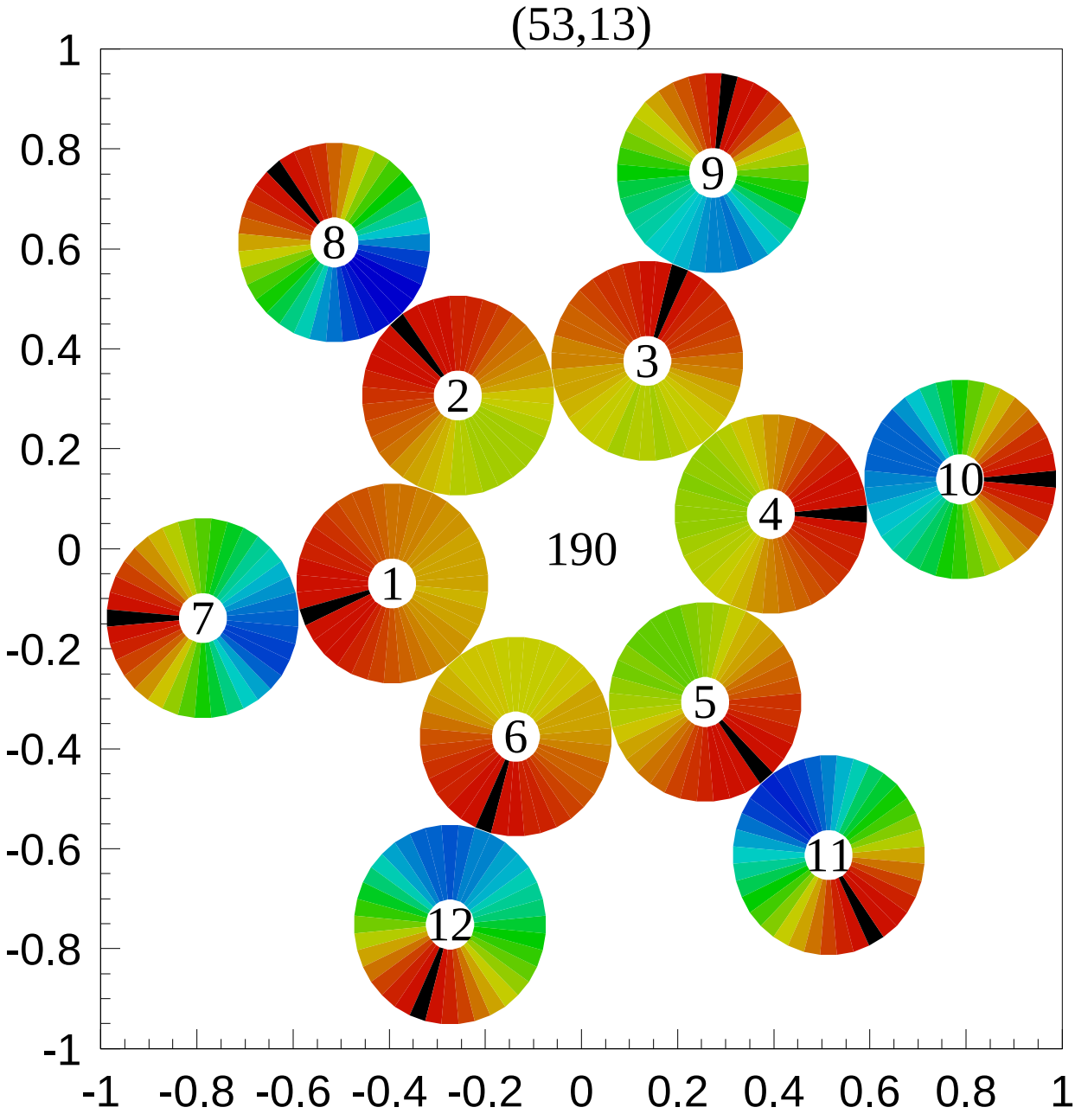

(52,56)
tilted LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

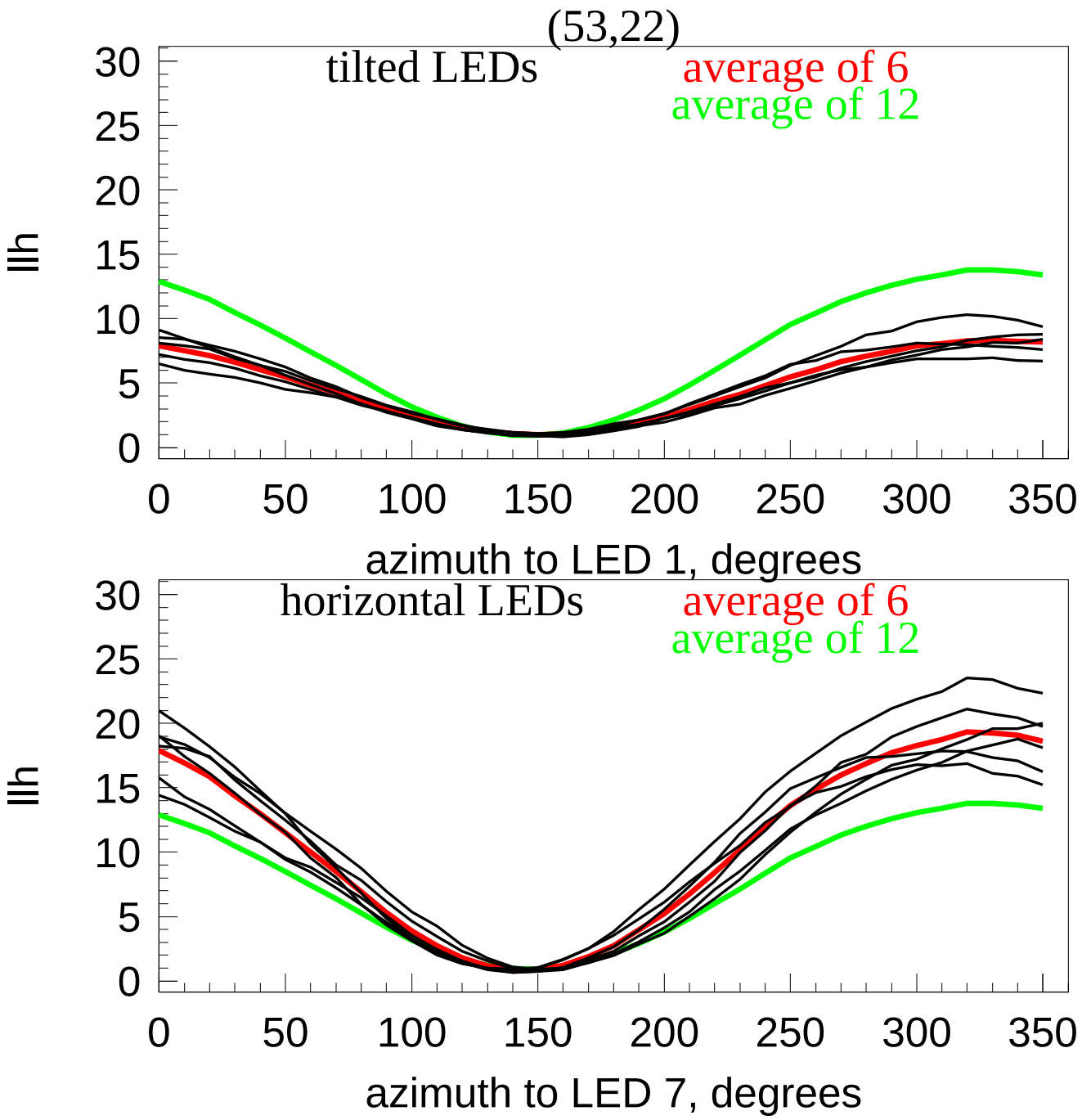

(52,56)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
180
5
11

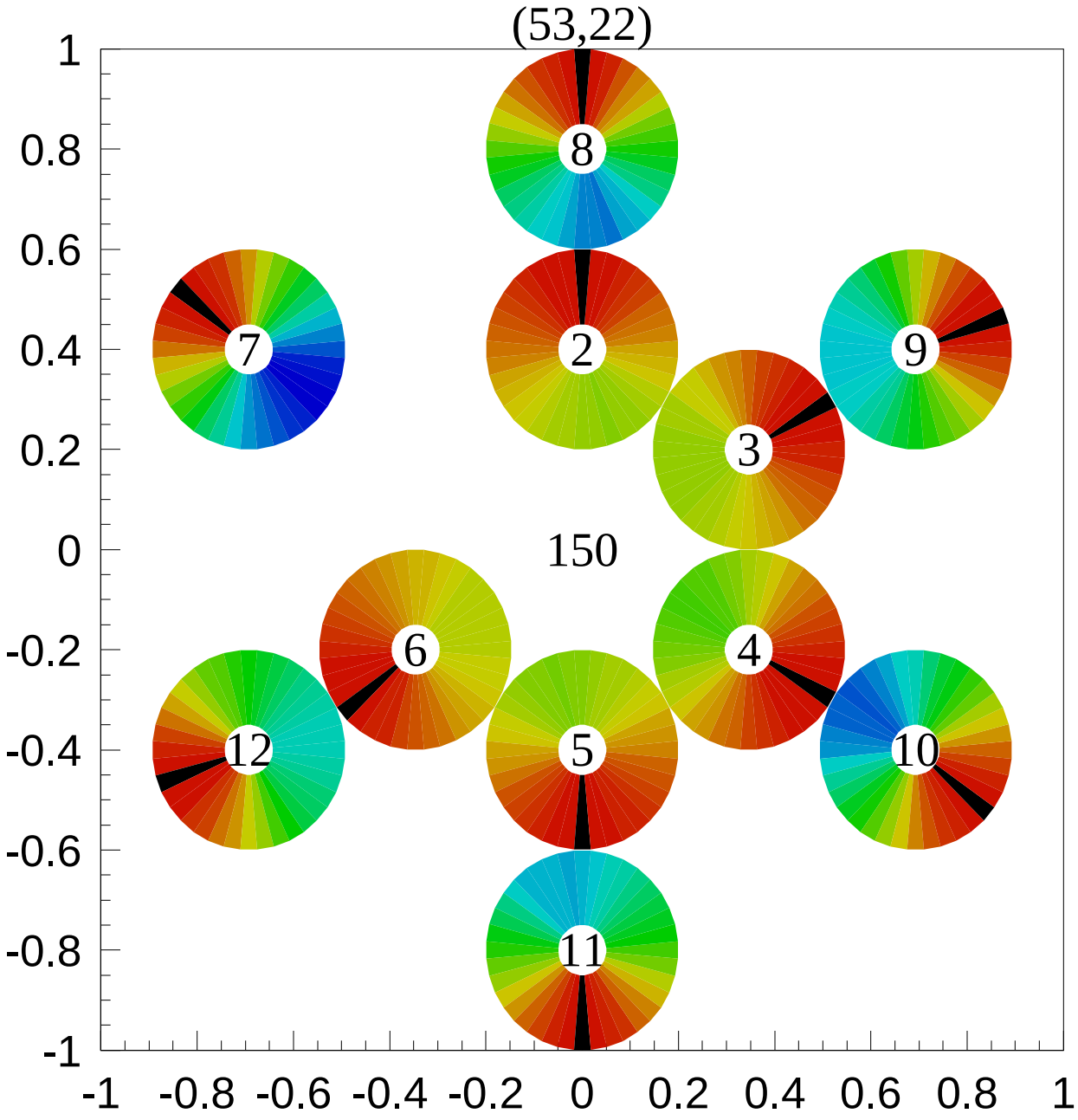

(53,1)
tilted LEDs
average of 6
average of 12
Ilh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

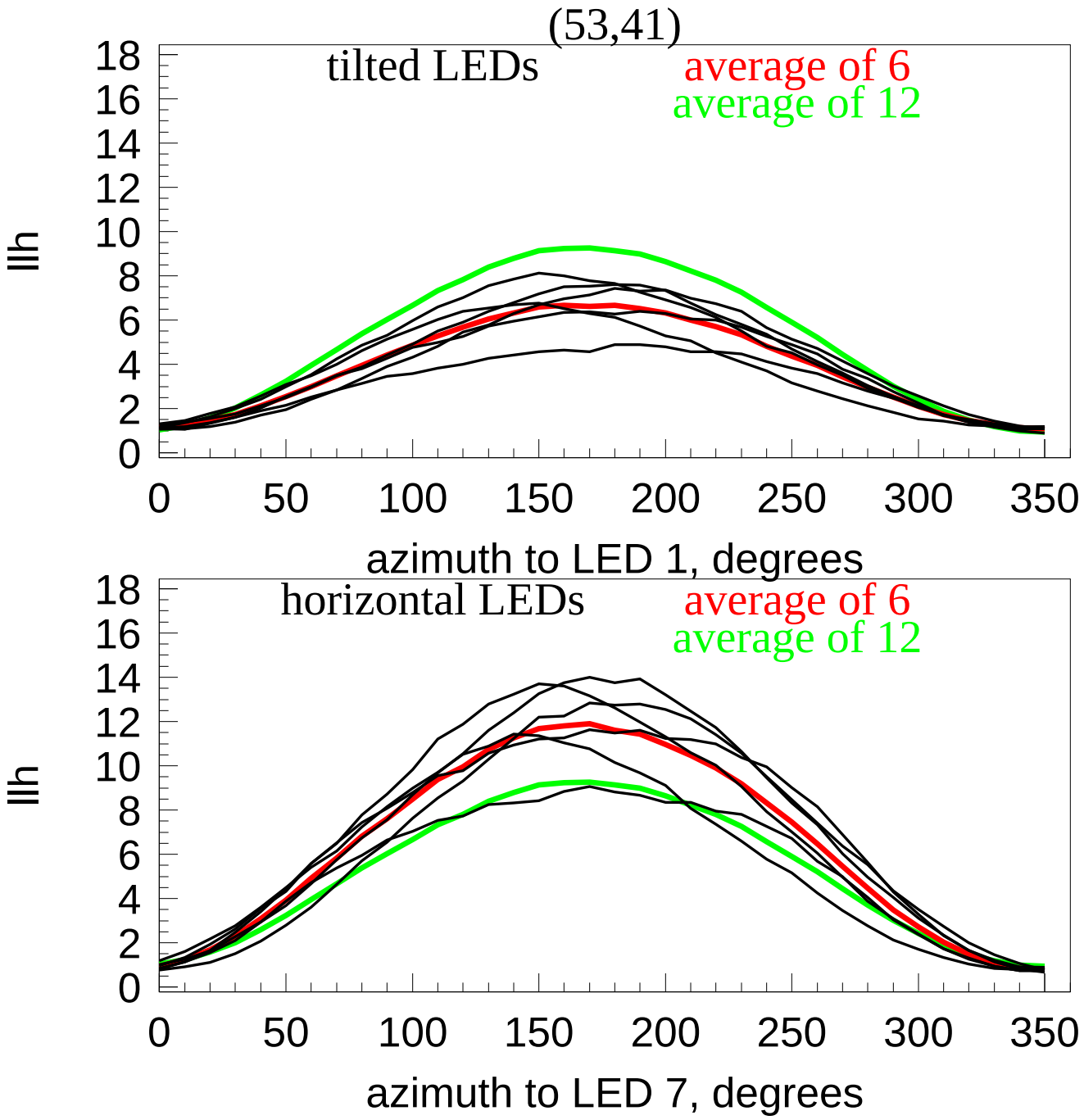

(53,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
12
5
6
10
4
350
7
3
2
9
8

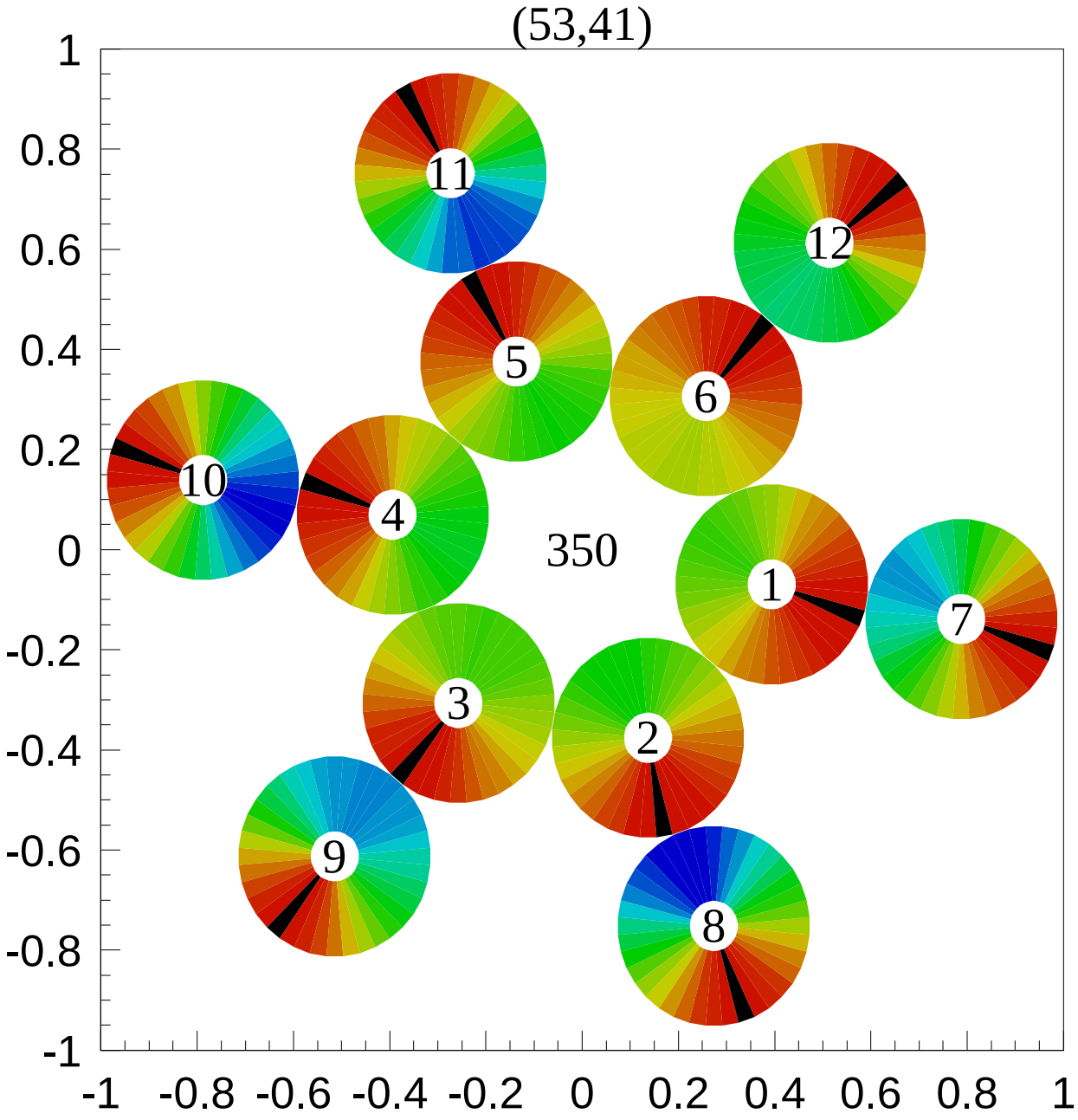

(53,13)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

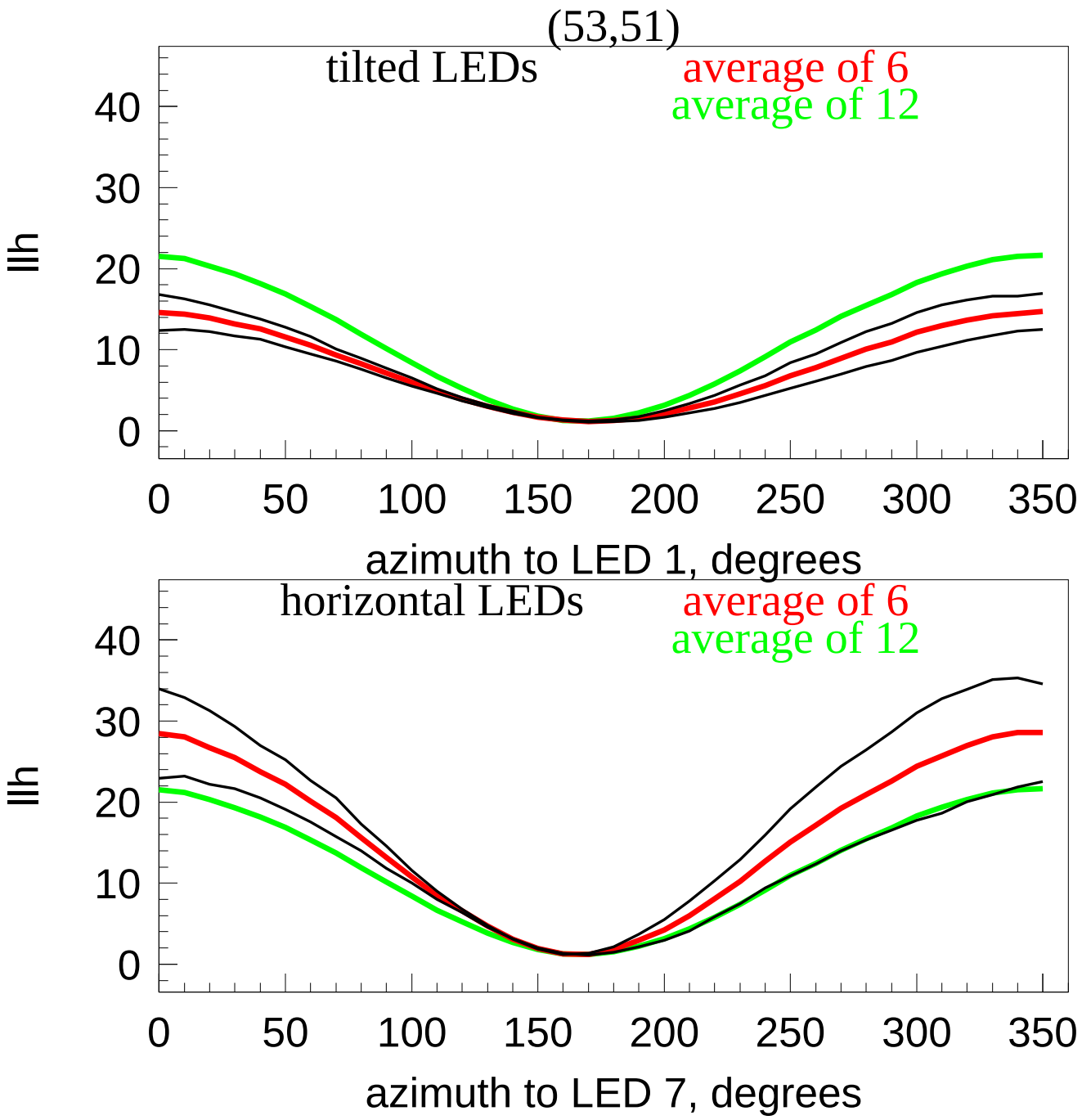

(53,13)
190
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

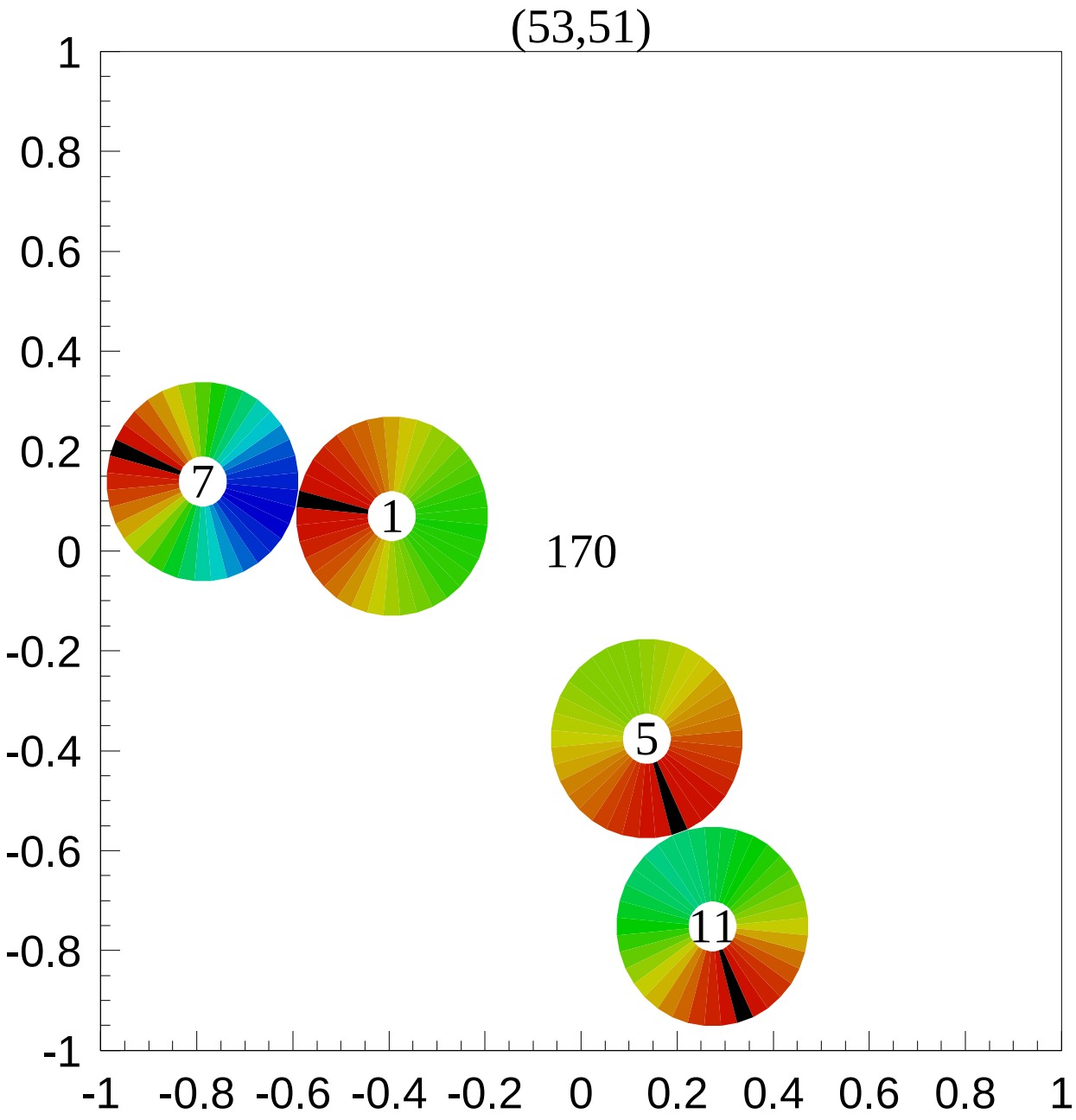

(53,22)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

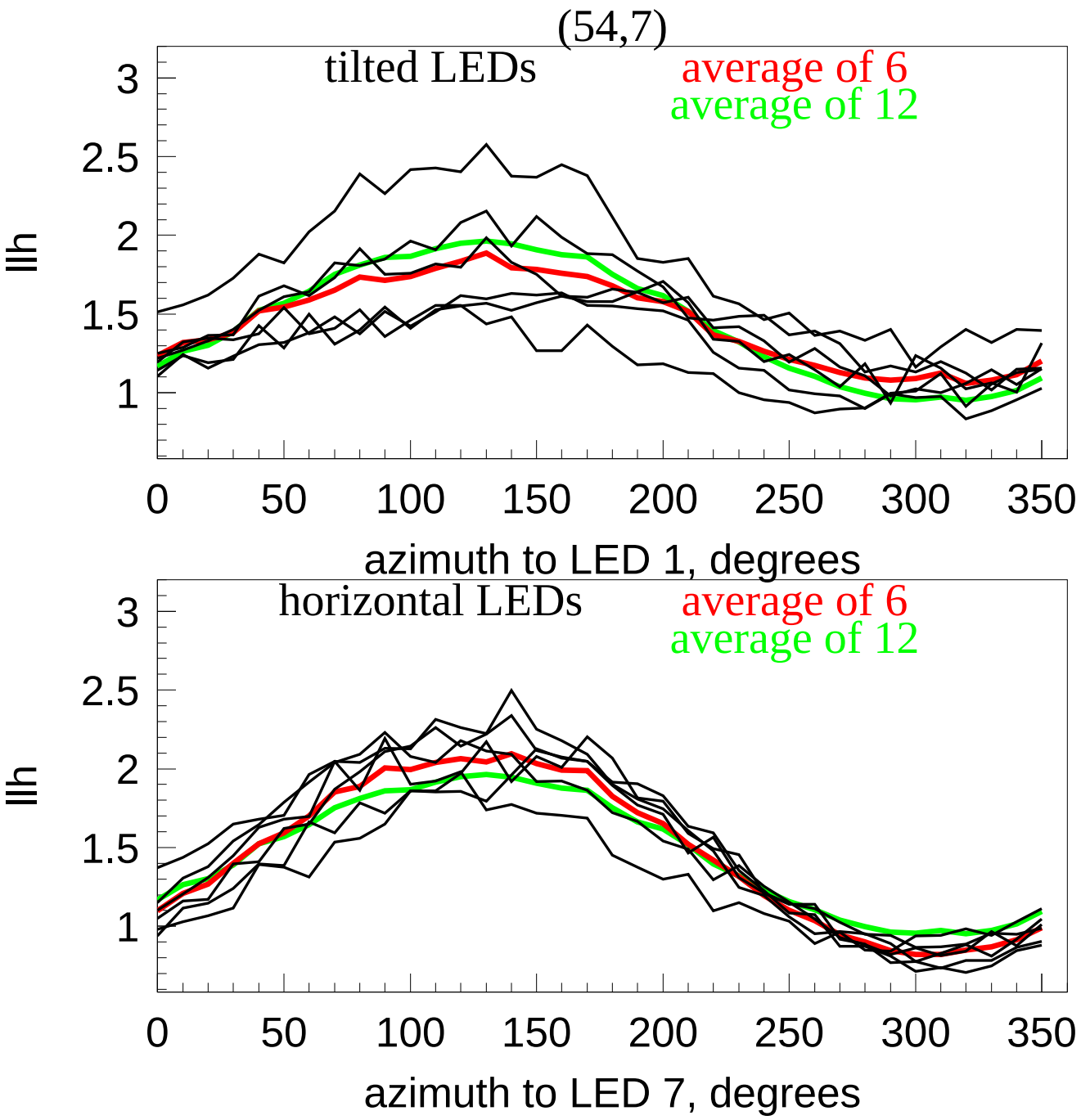

(53,22)
8
7
2
9
3
150
6
4
12
5
10
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

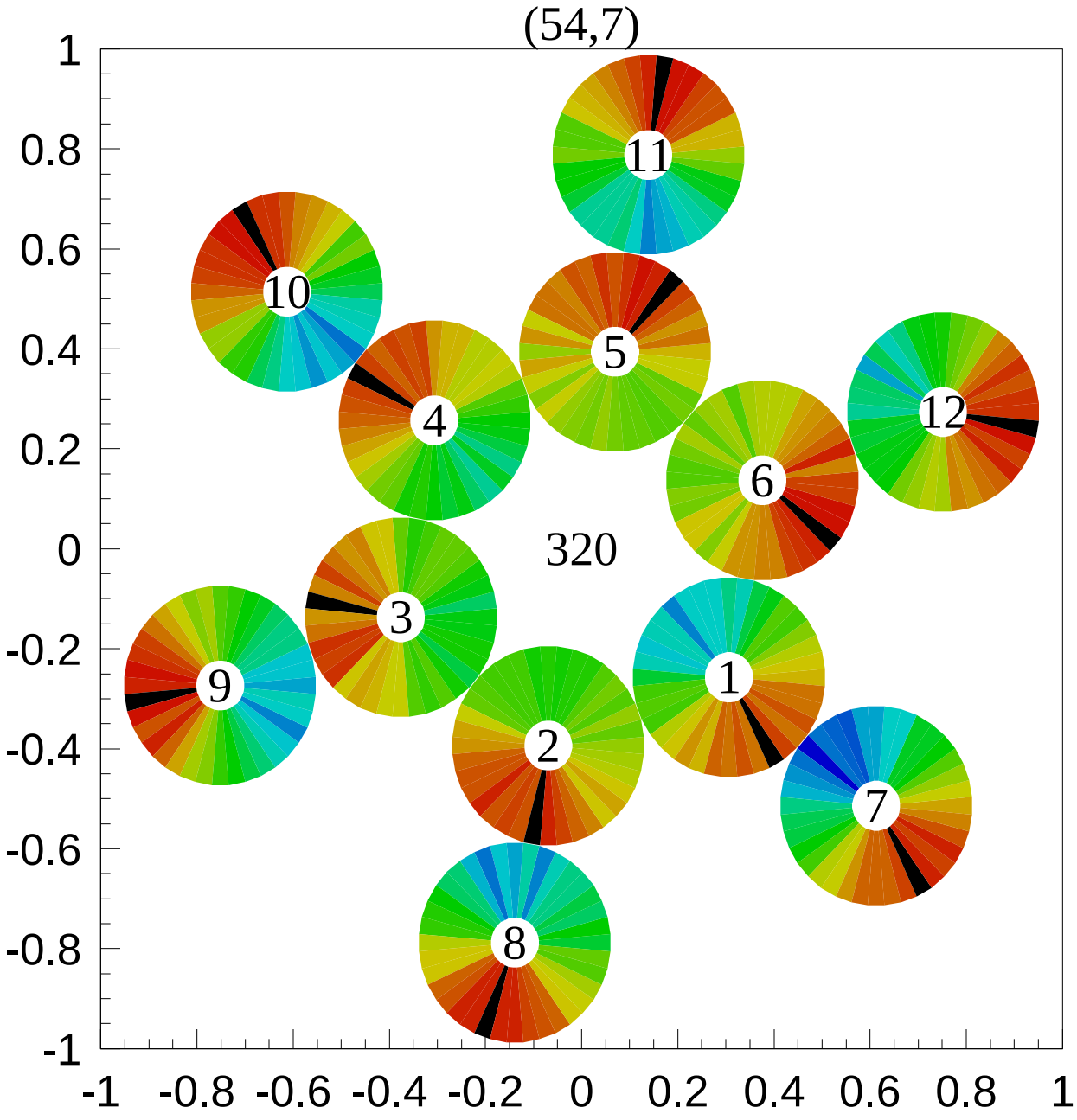

(53,41)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

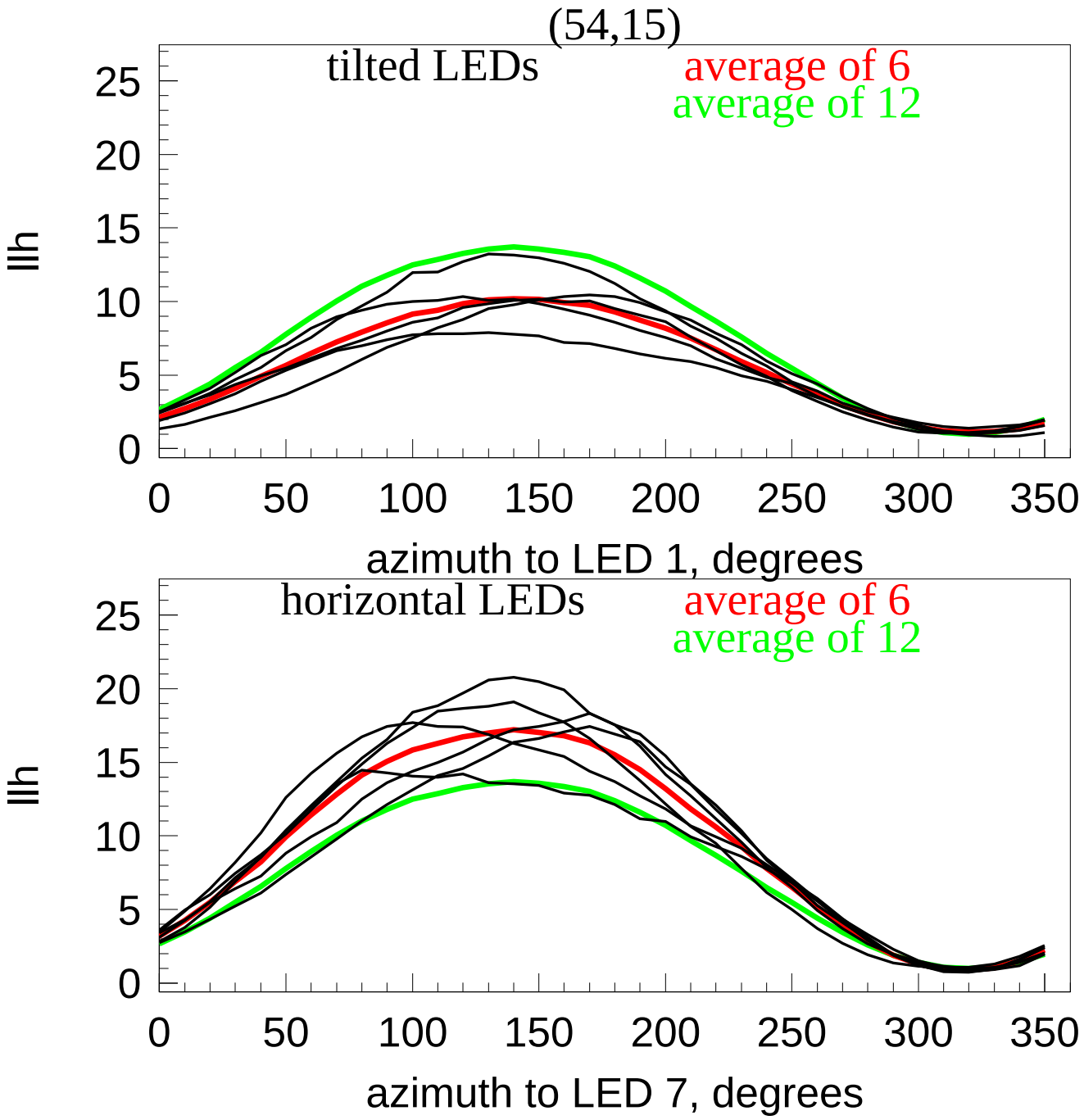

(53,41)
350
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

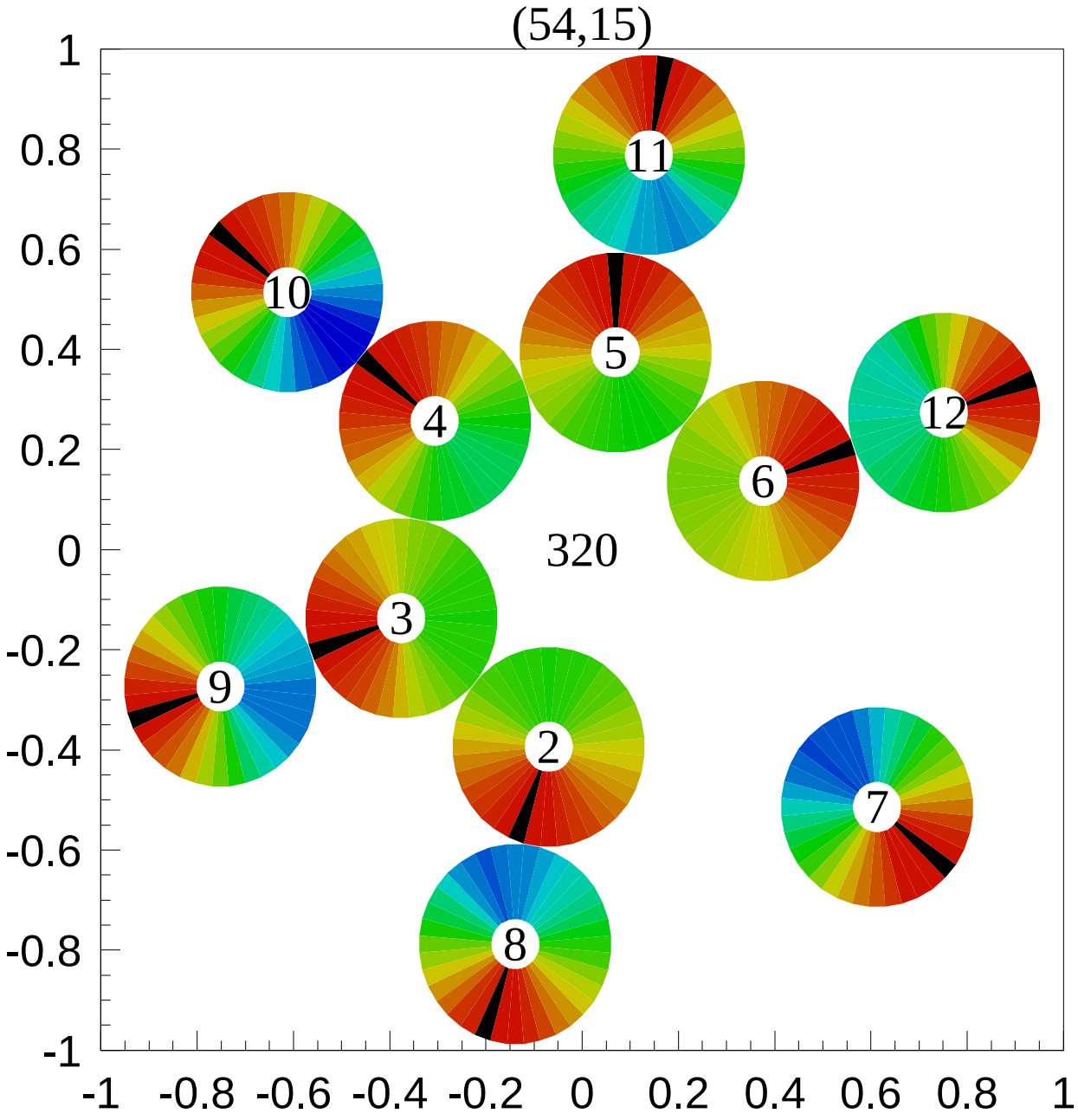

(53,51)
tilted LEDs
average of 6
average of 12
40
30
20
10
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
40
30
20
10
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

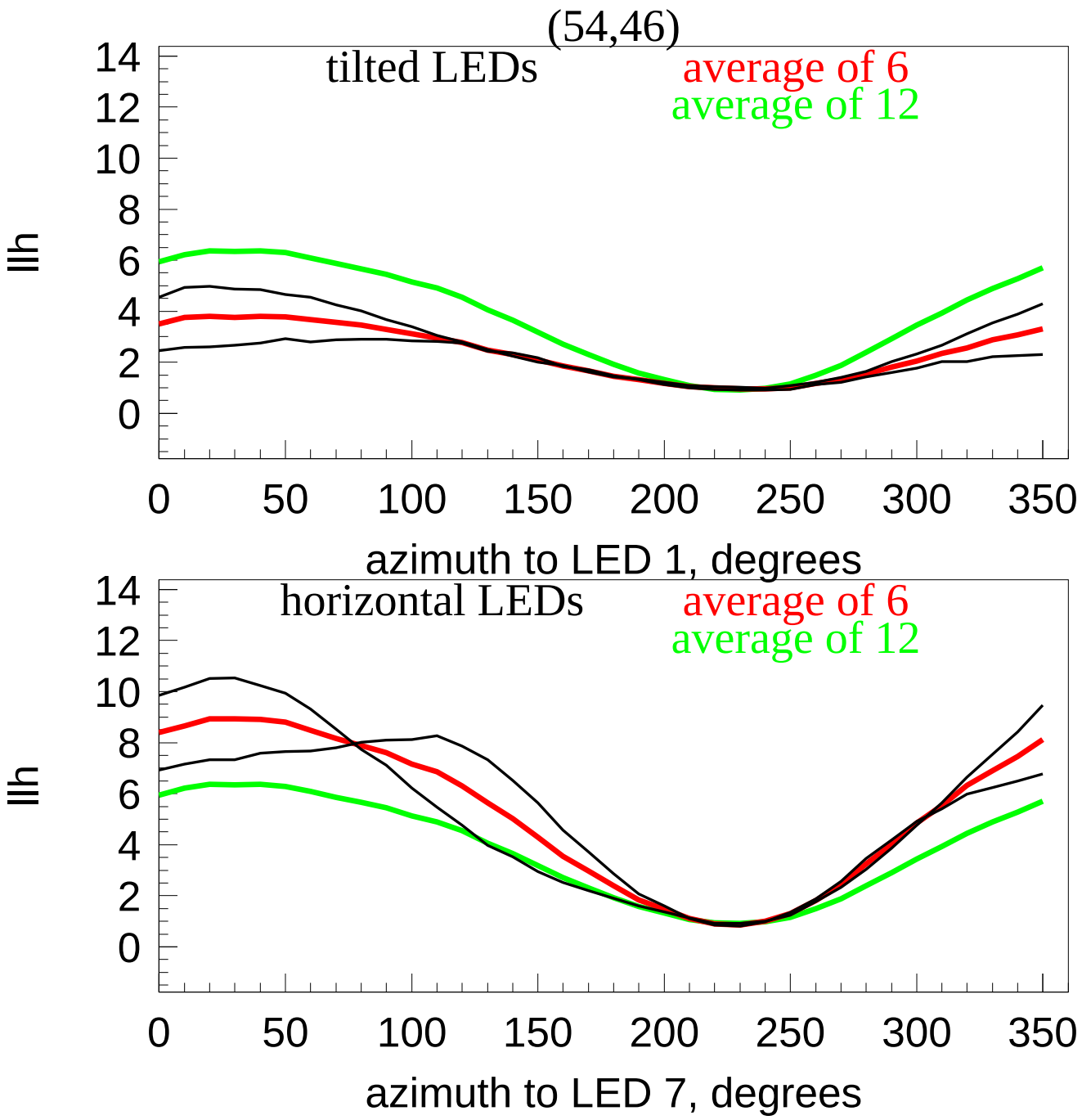

(53,51)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
170
5
11

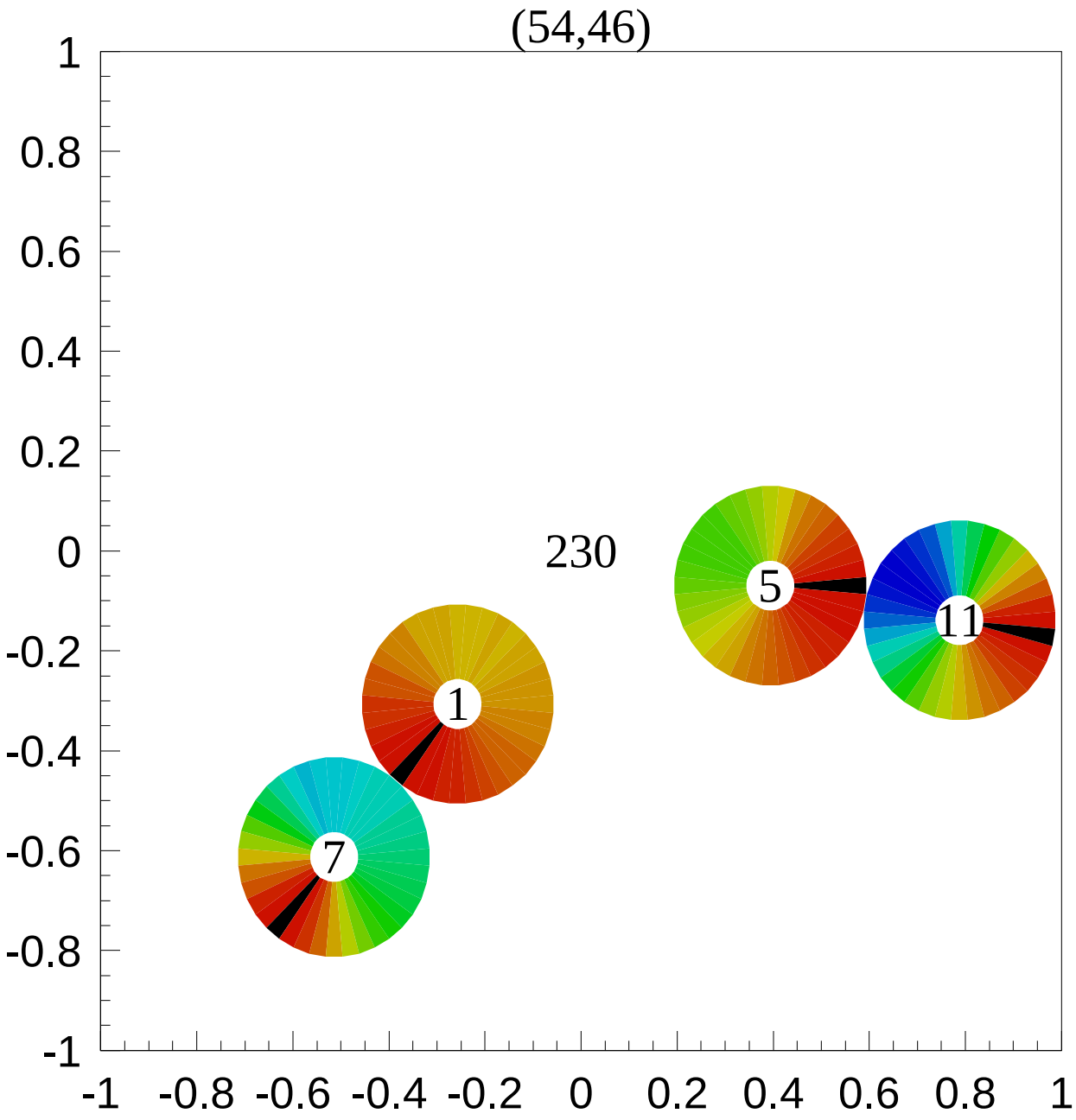

(54,7)
tilted LEDs
average of 6
average of 12
llh
3
2.5
2
1.5
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
3
2.5
2
1.5
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

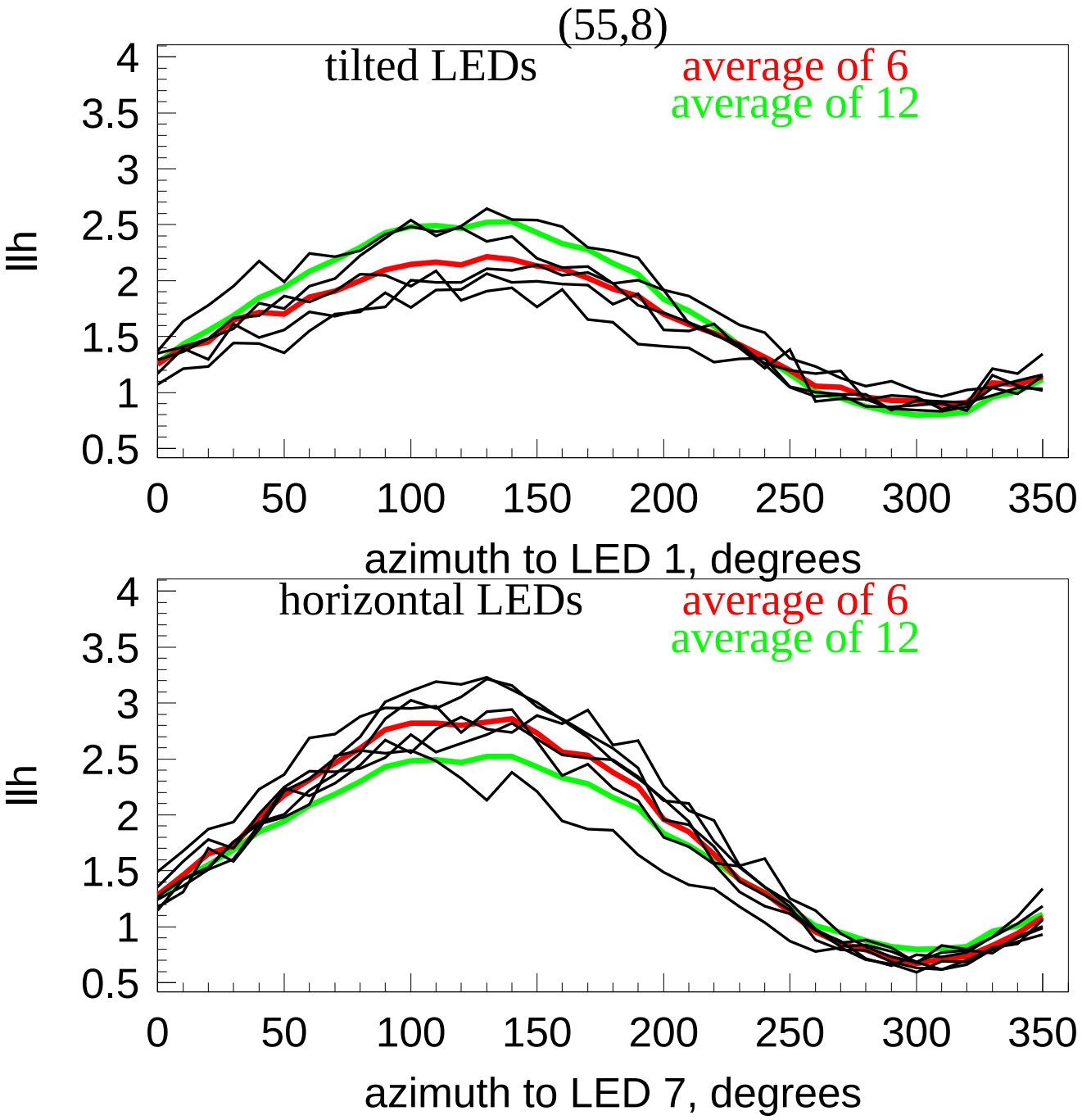

(54,7)
320
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

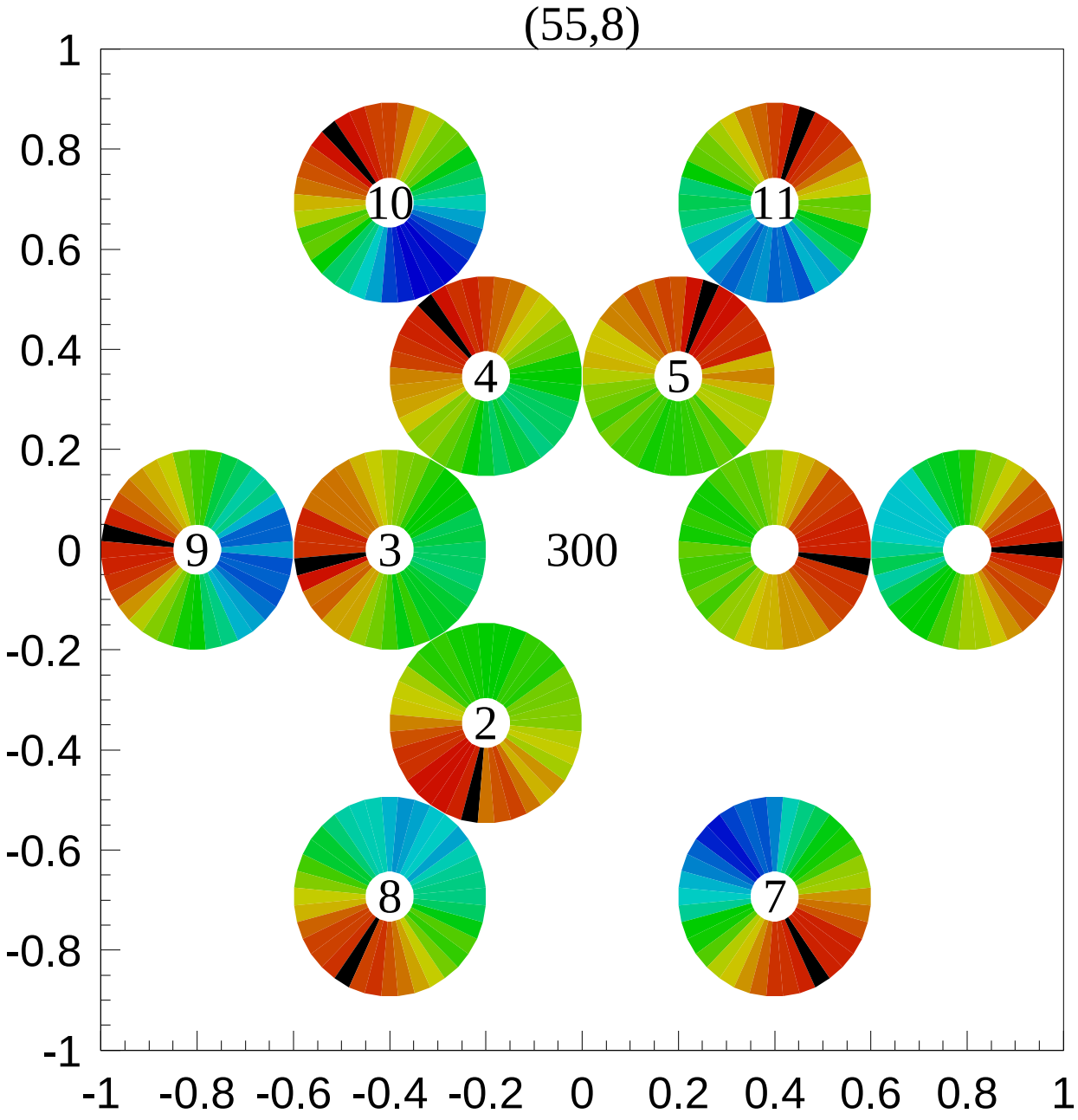

(54,15)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

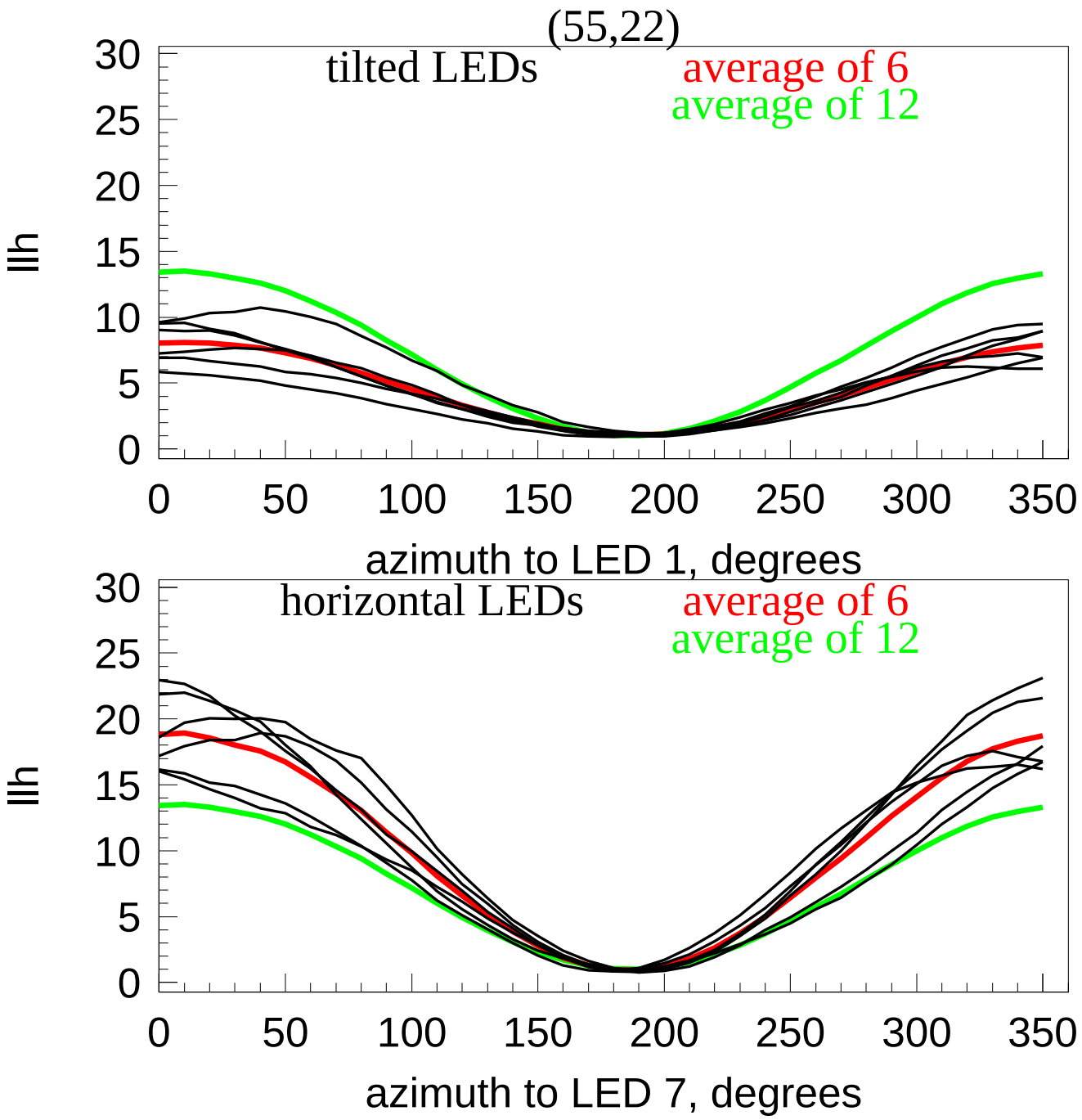

(54,15)
11
10
5
4
12
6
320
3
9
2
7
8
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

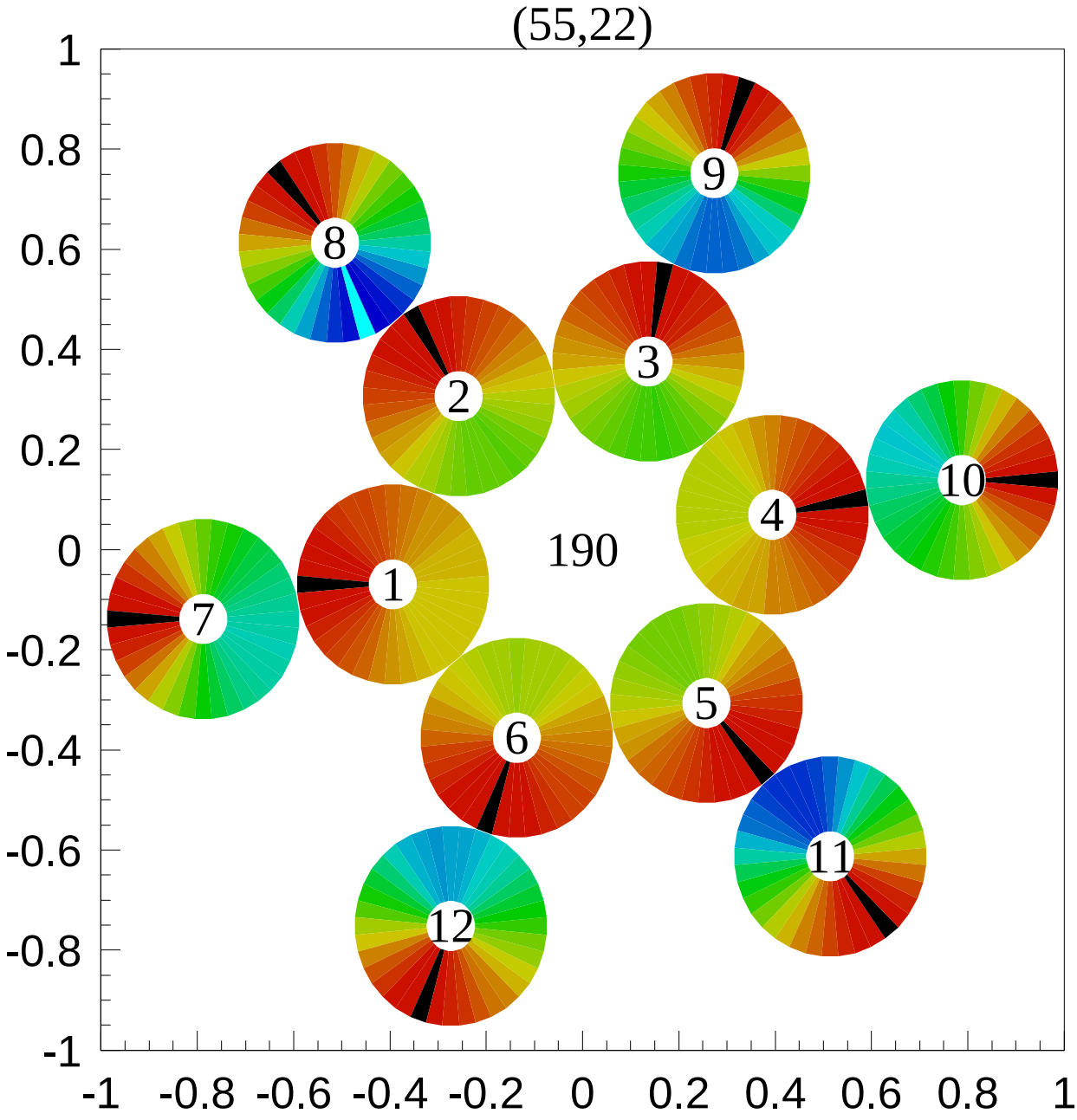

(54,46)
tilted LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

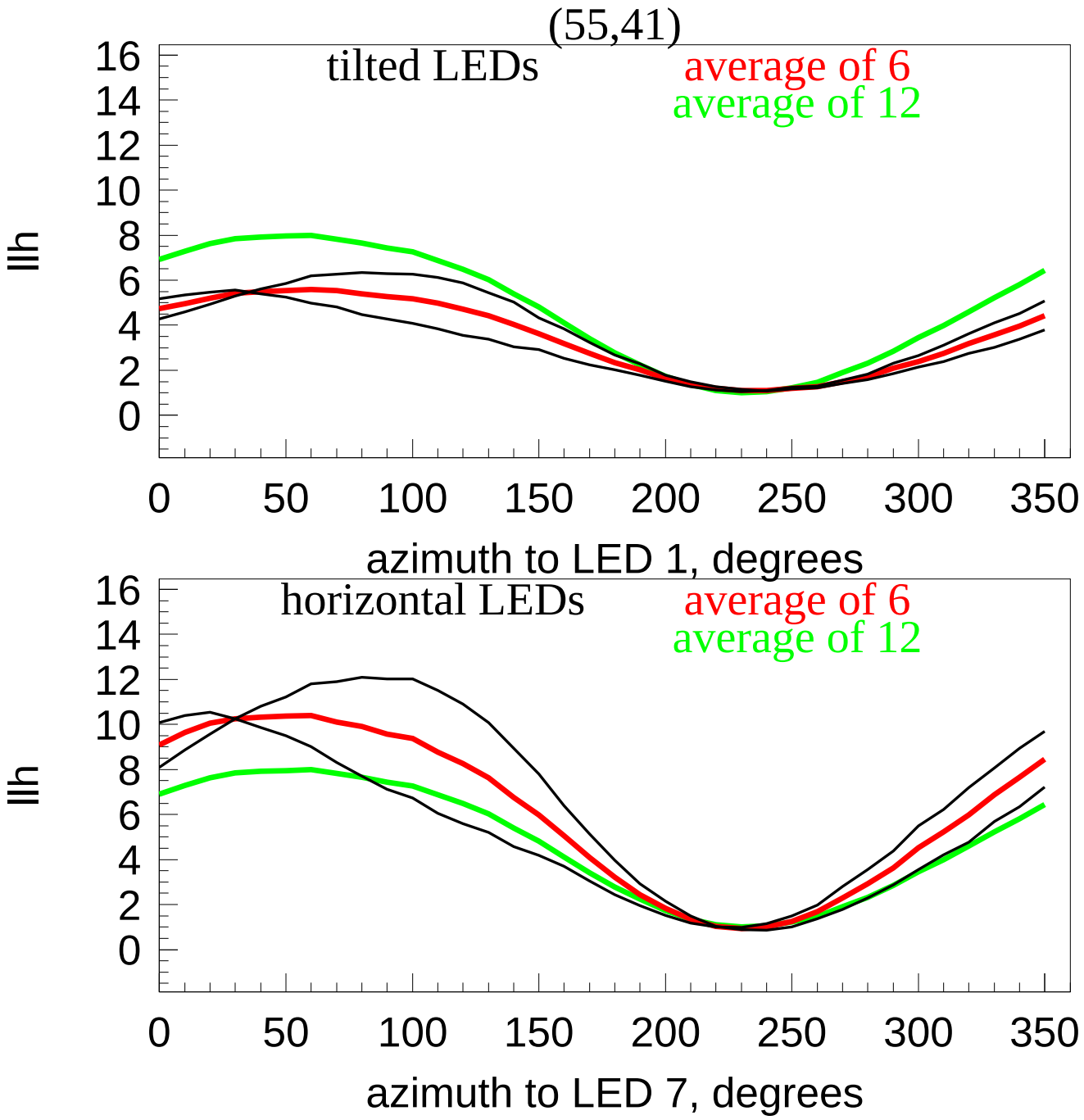

(54,46)
230
1
5
11
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

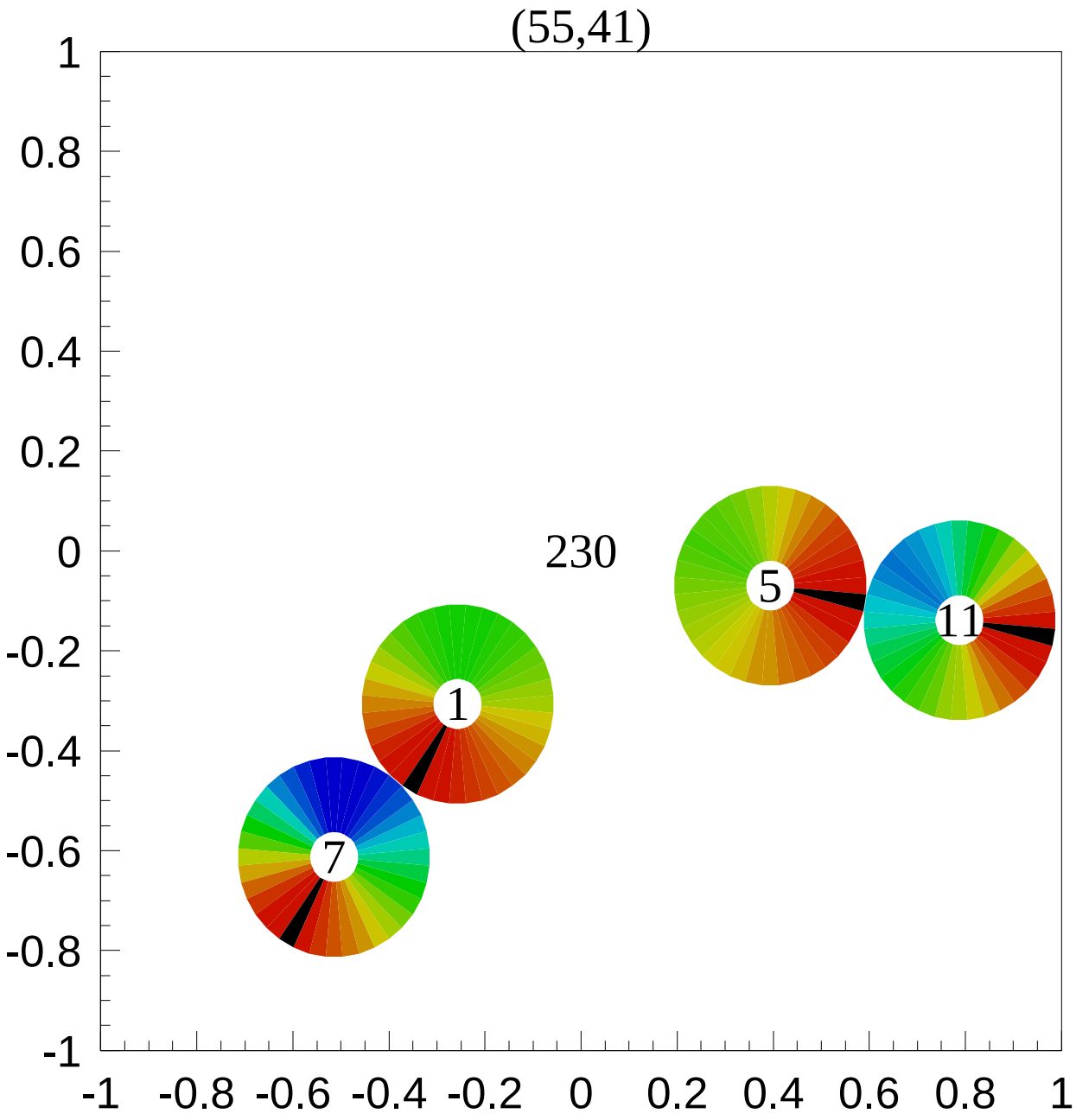

(55,8)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

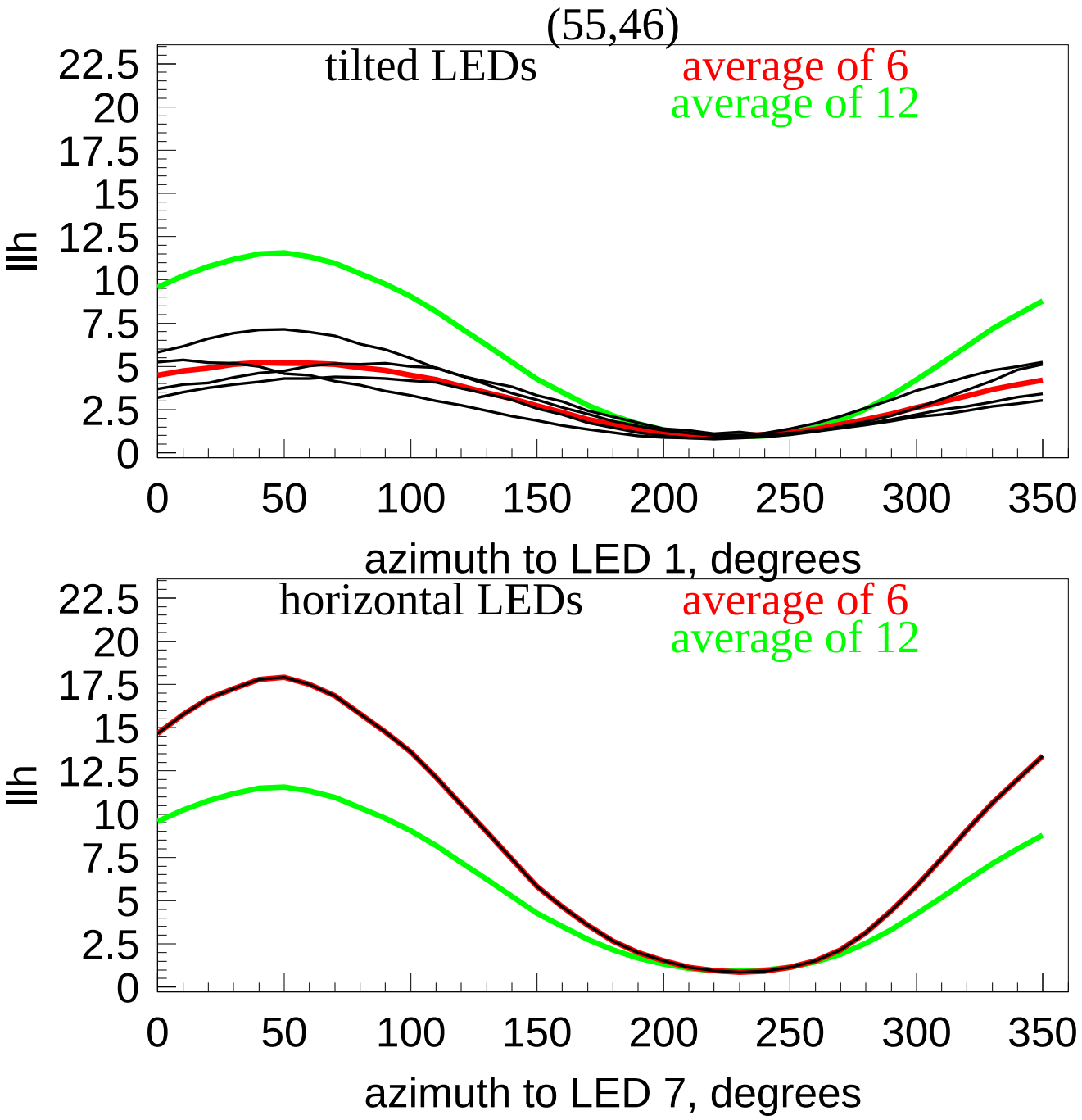

(55,8)
10
11
4
5
9
3
300
2
8
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

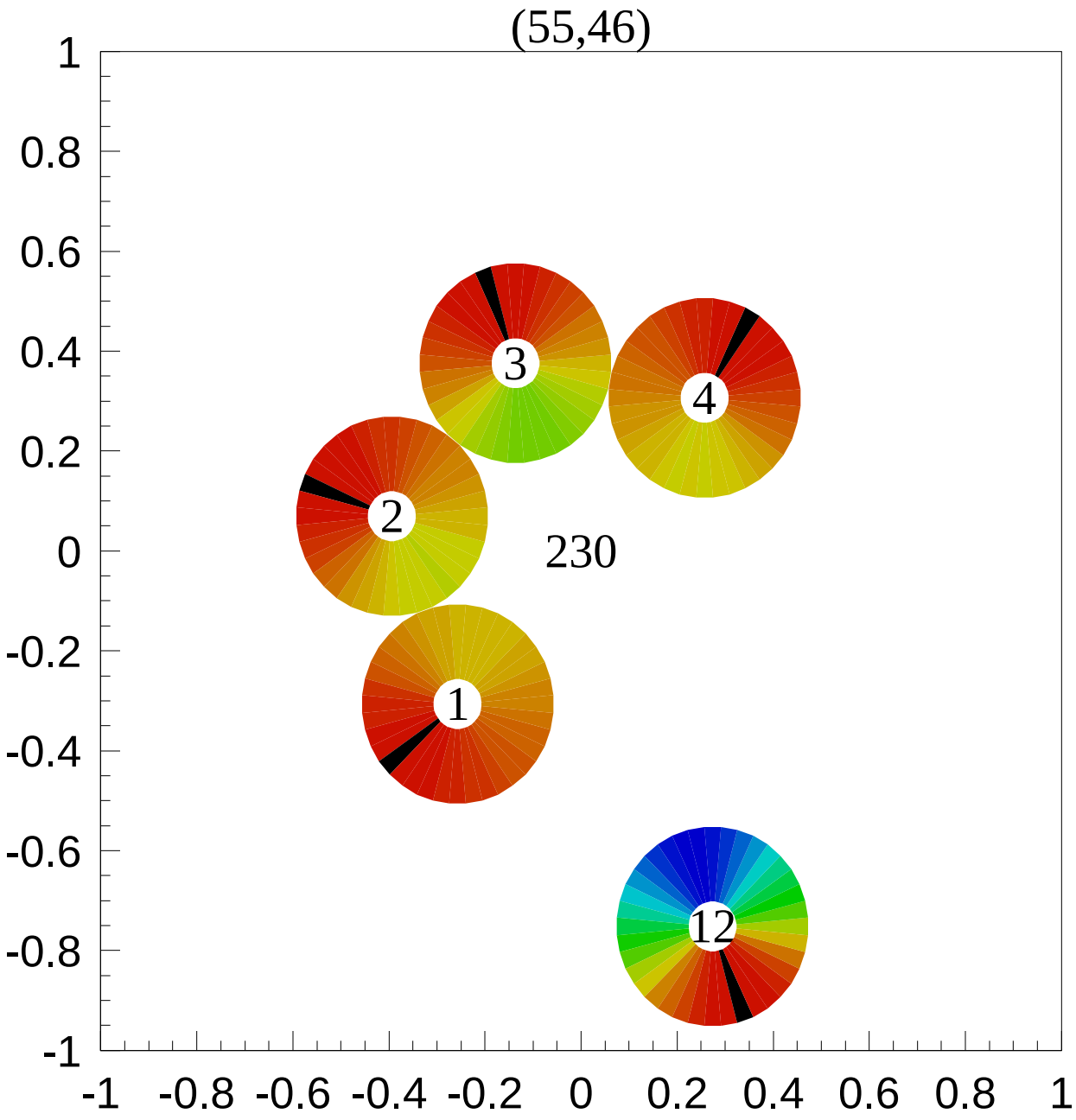

(55,22)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

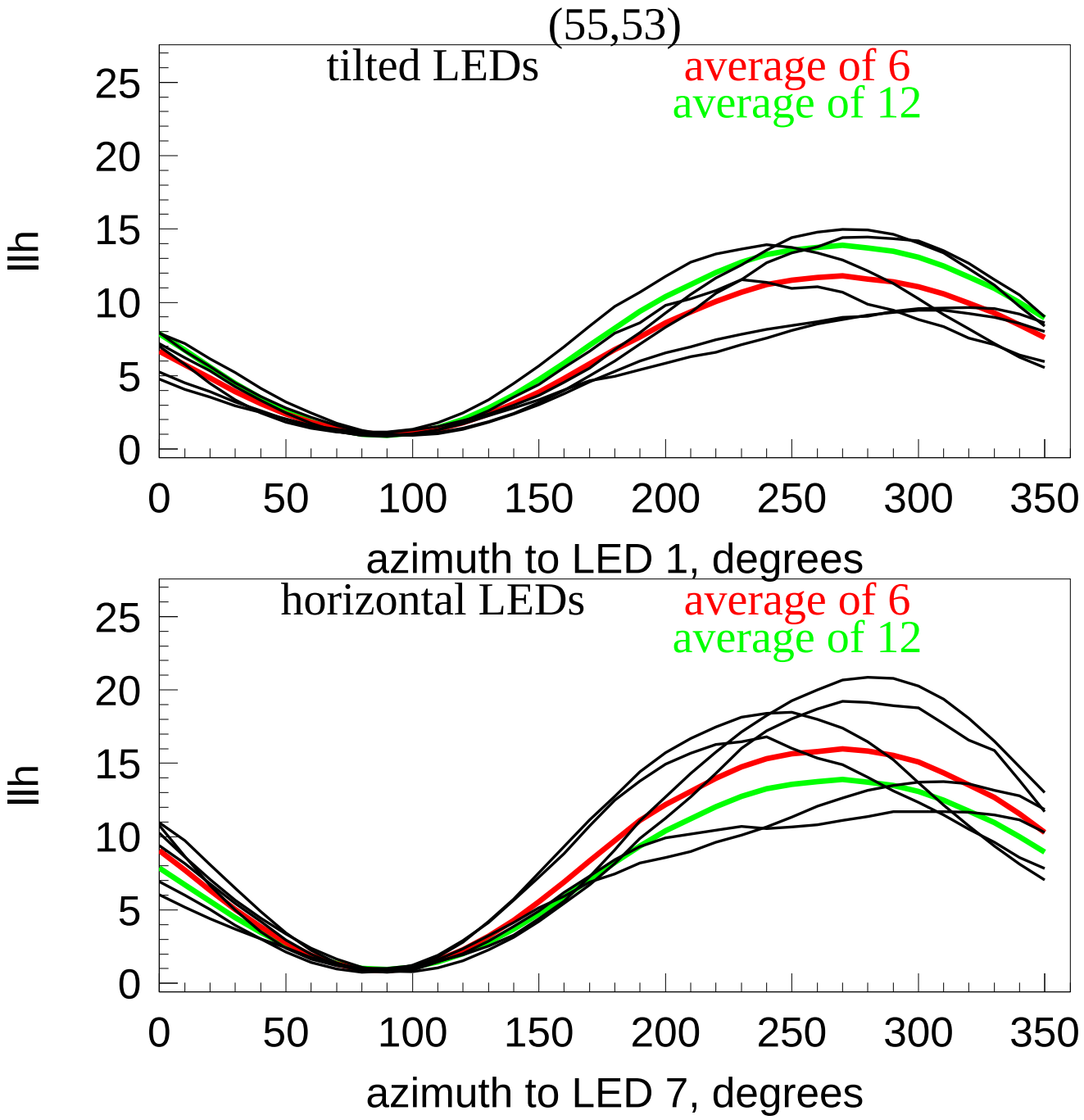

(55,22)
190
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

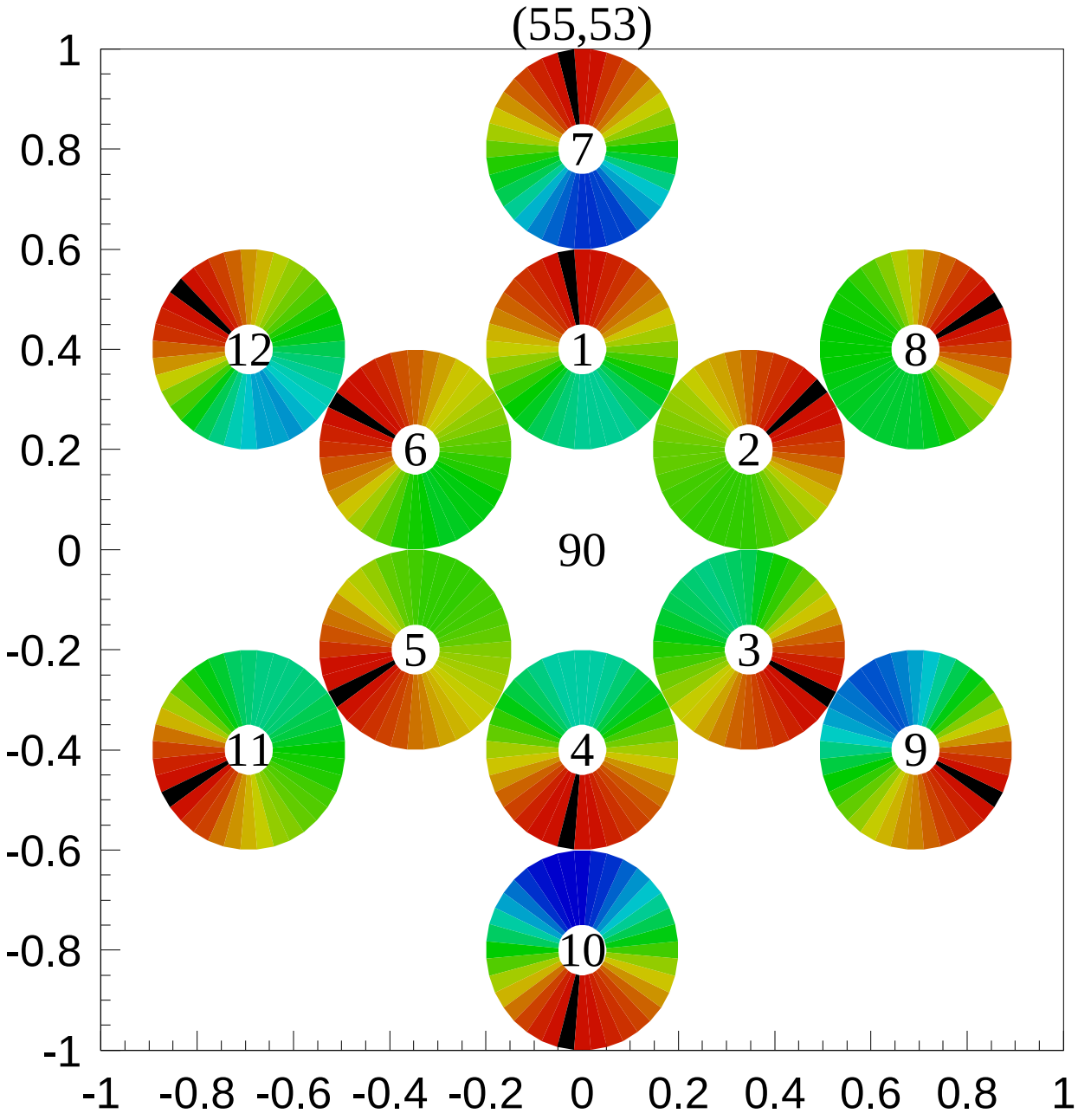

(55,41)
tilted LEDs
average of 6
average of 12
Ilh
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

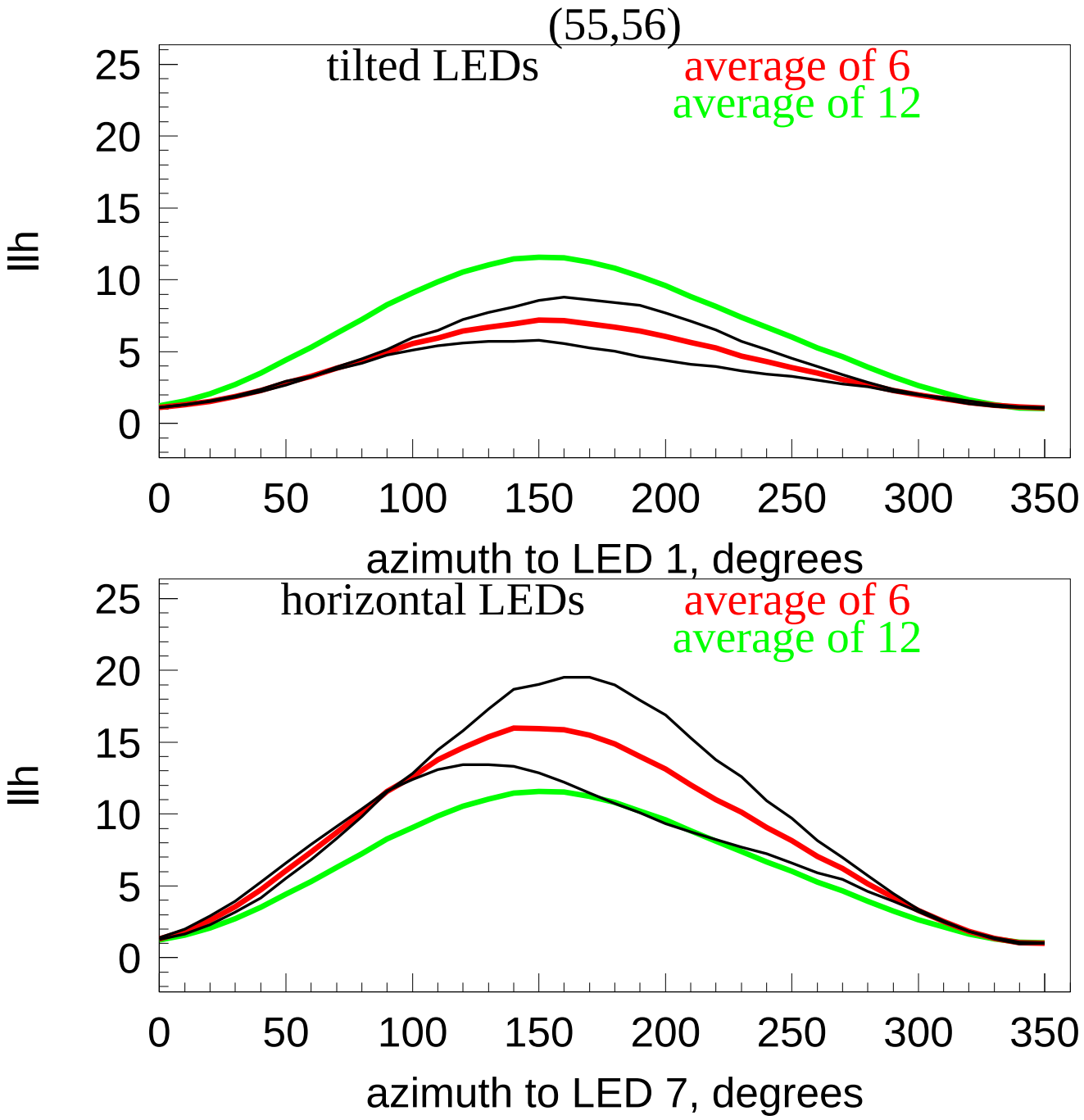

(55,41)
230
1
5
11
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

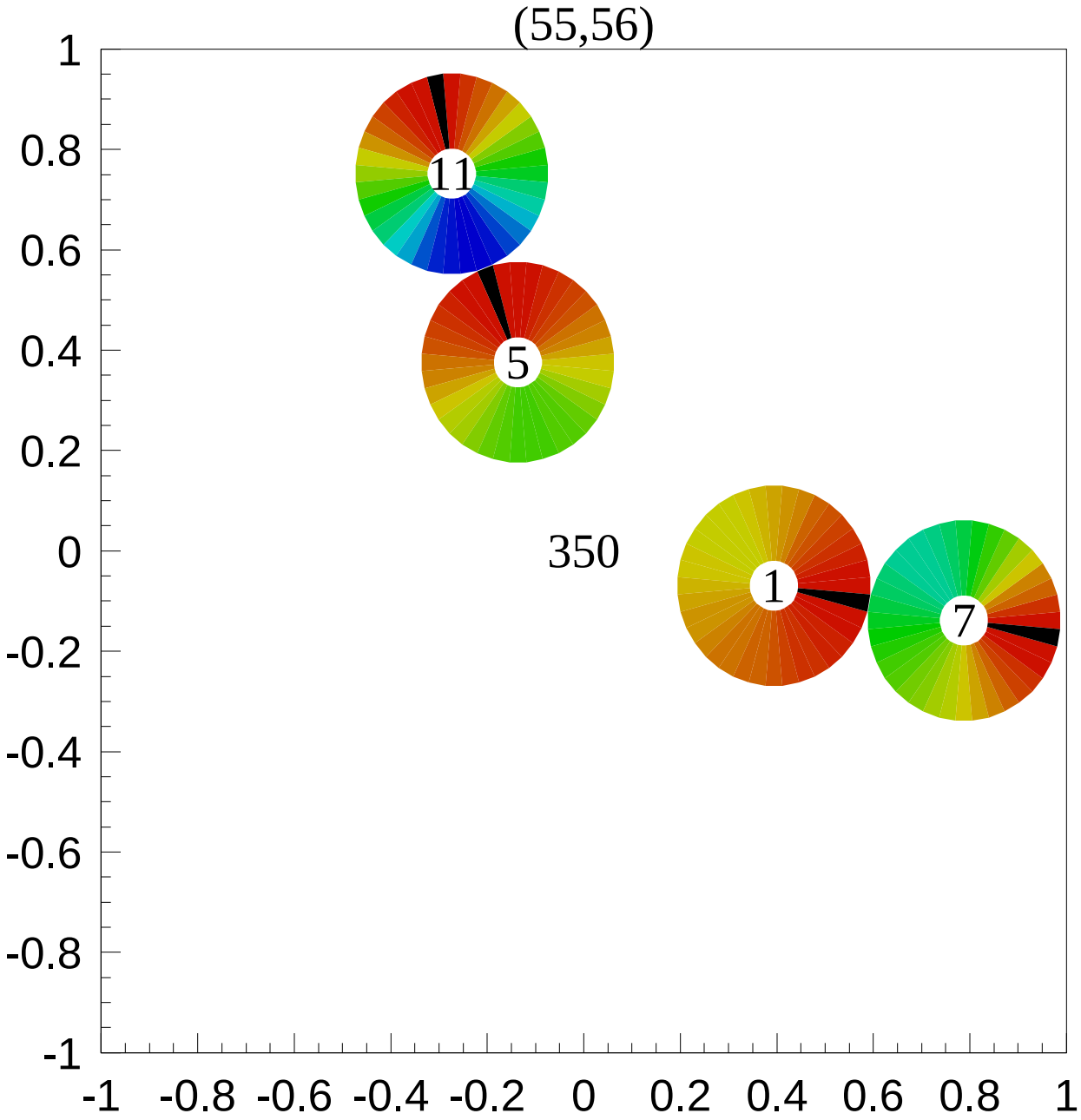

(55,46)
tilted LEDs
average of 6
average of 12
llh
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

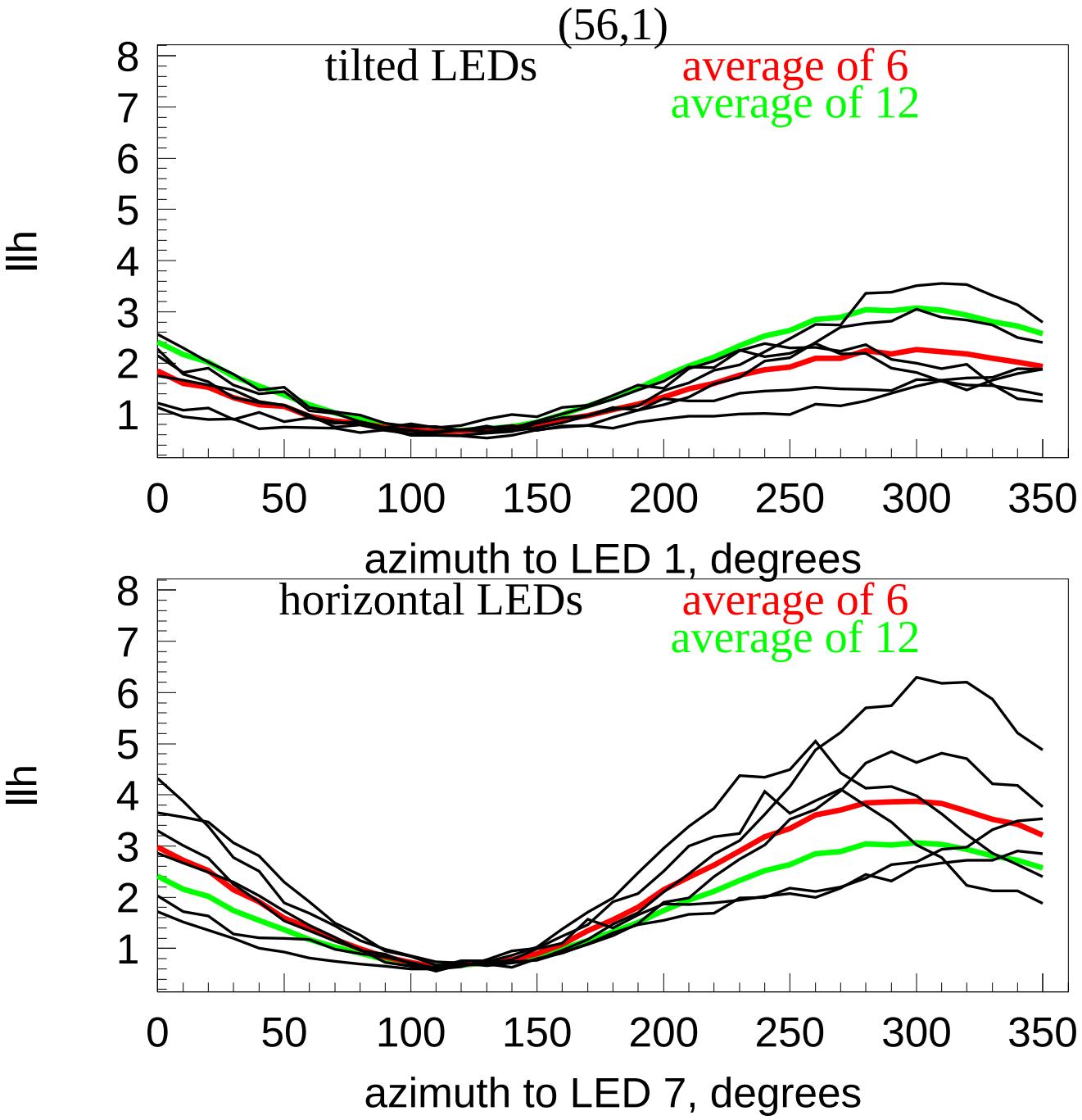

(55,46)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
3
4
2
230
1
12

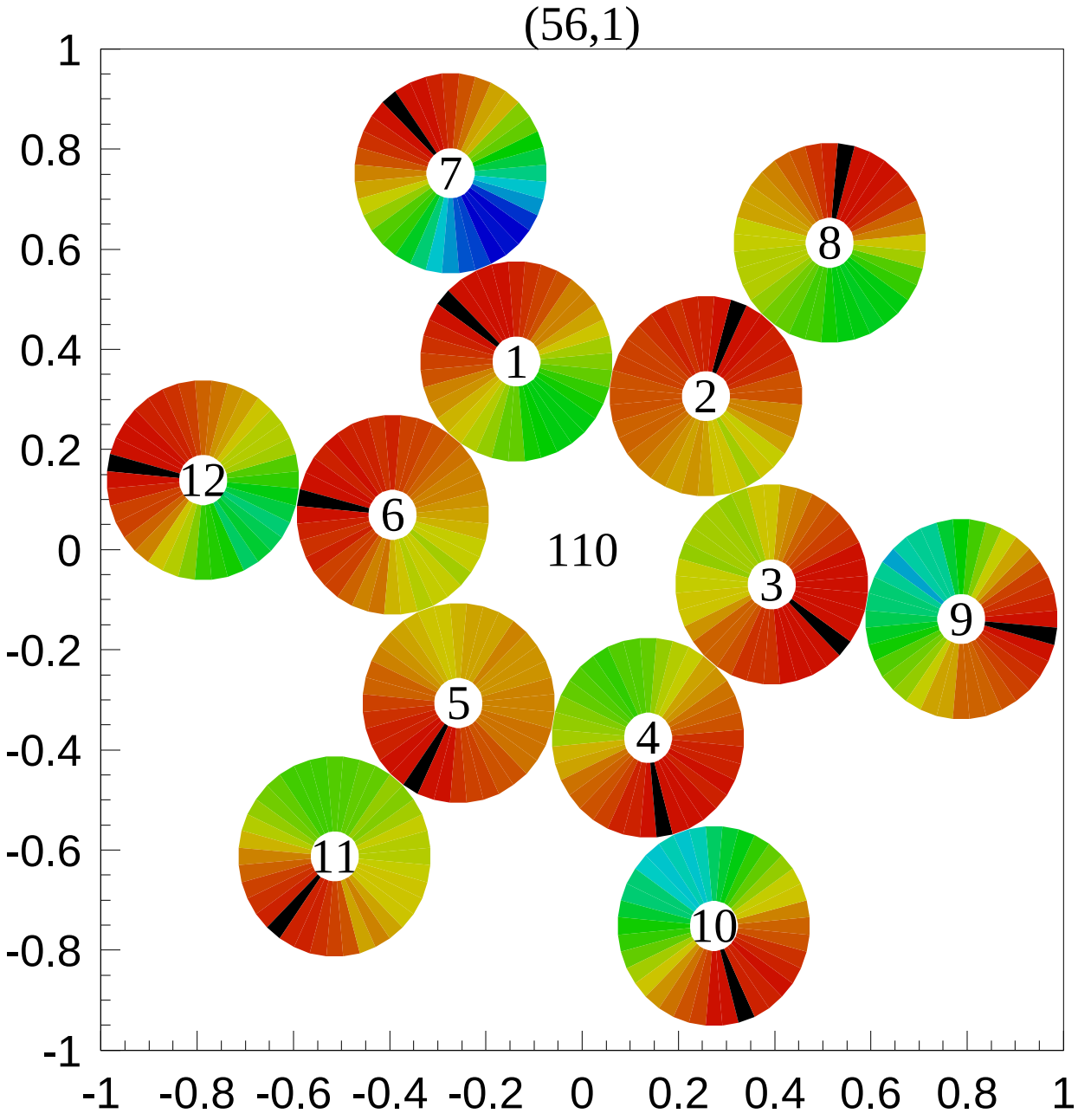

(55,53)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

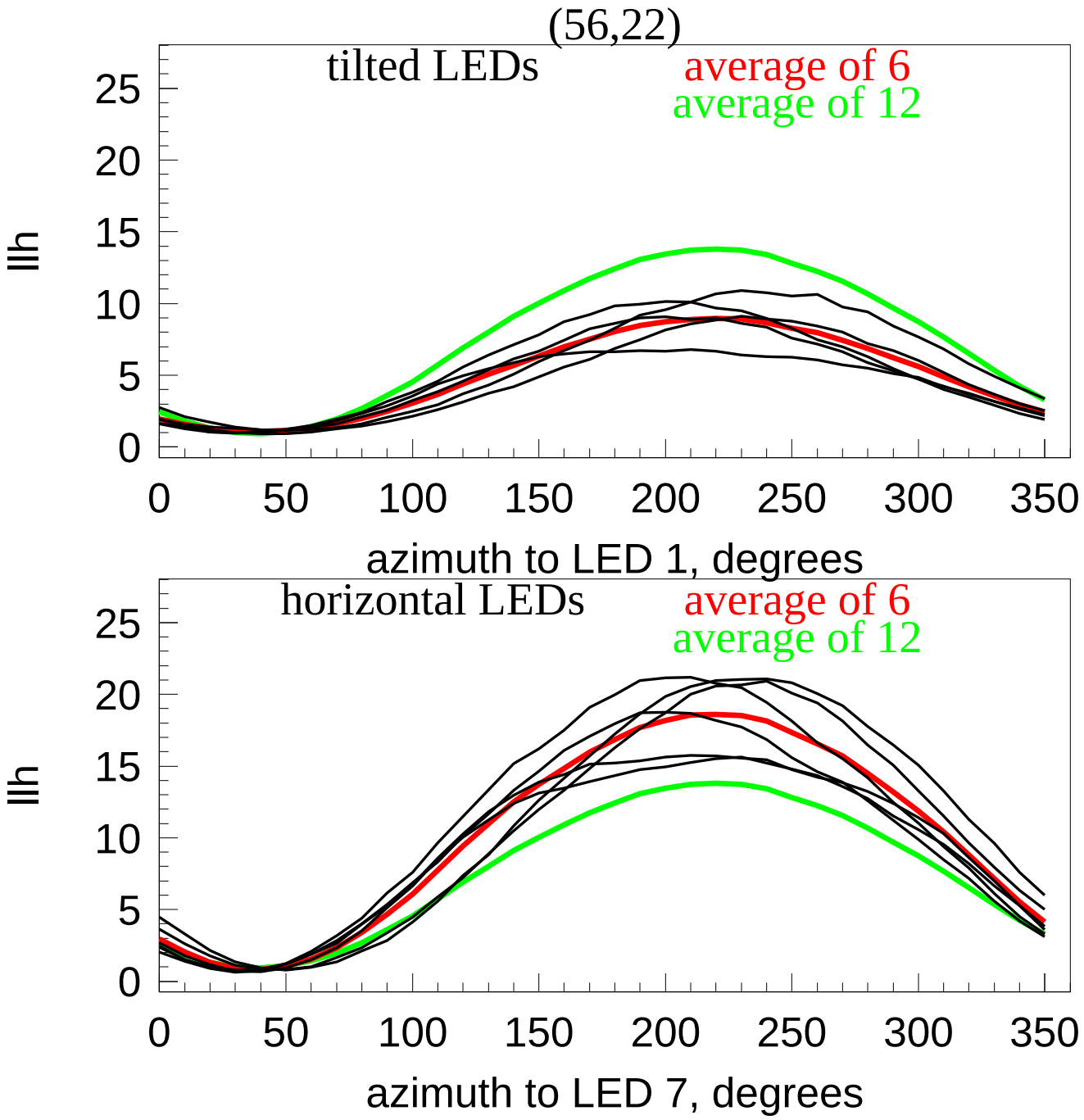

(55,53)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
12
1
8
6
2
90
5
3
11
4
9
10

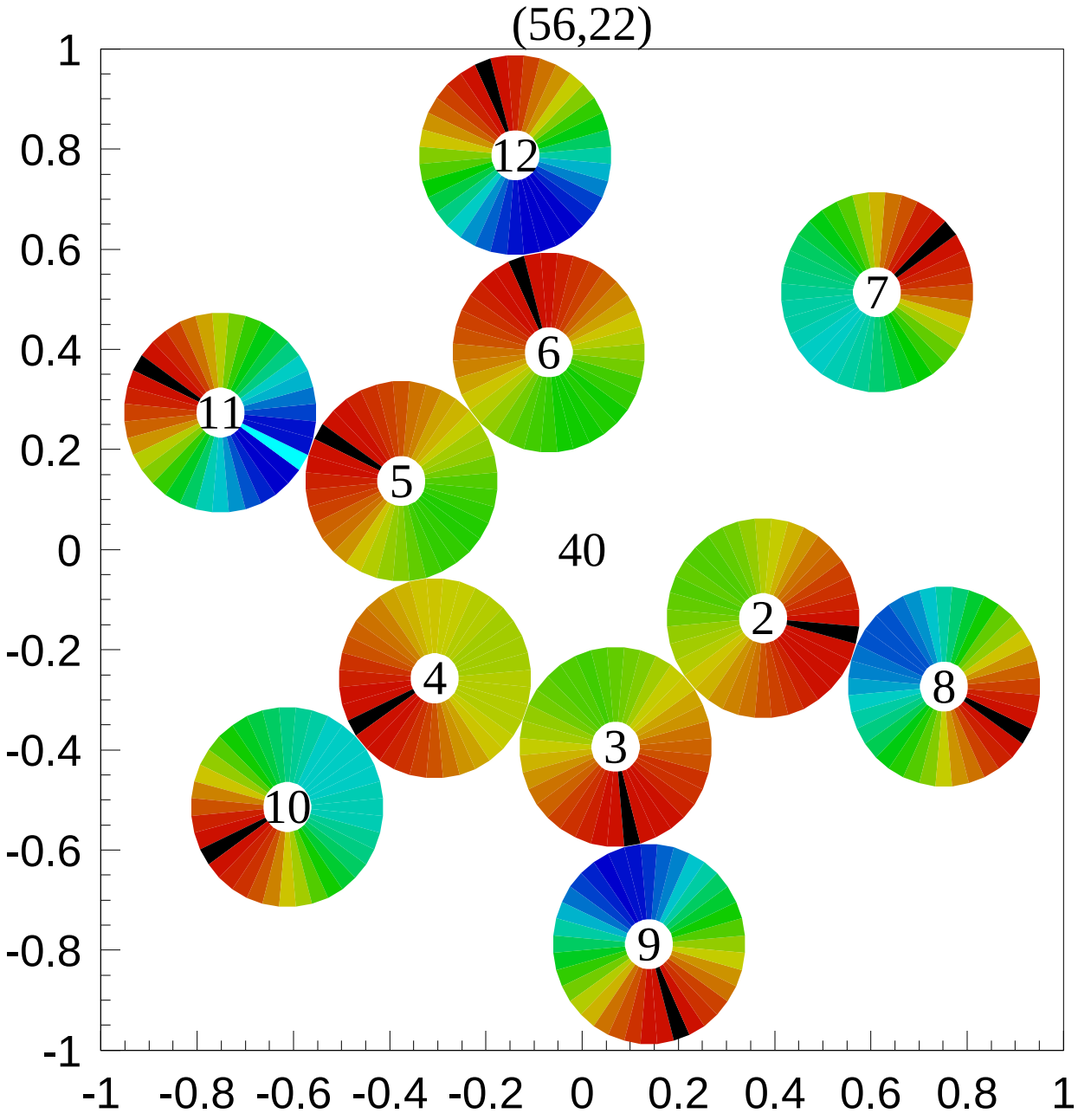

(55,56)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

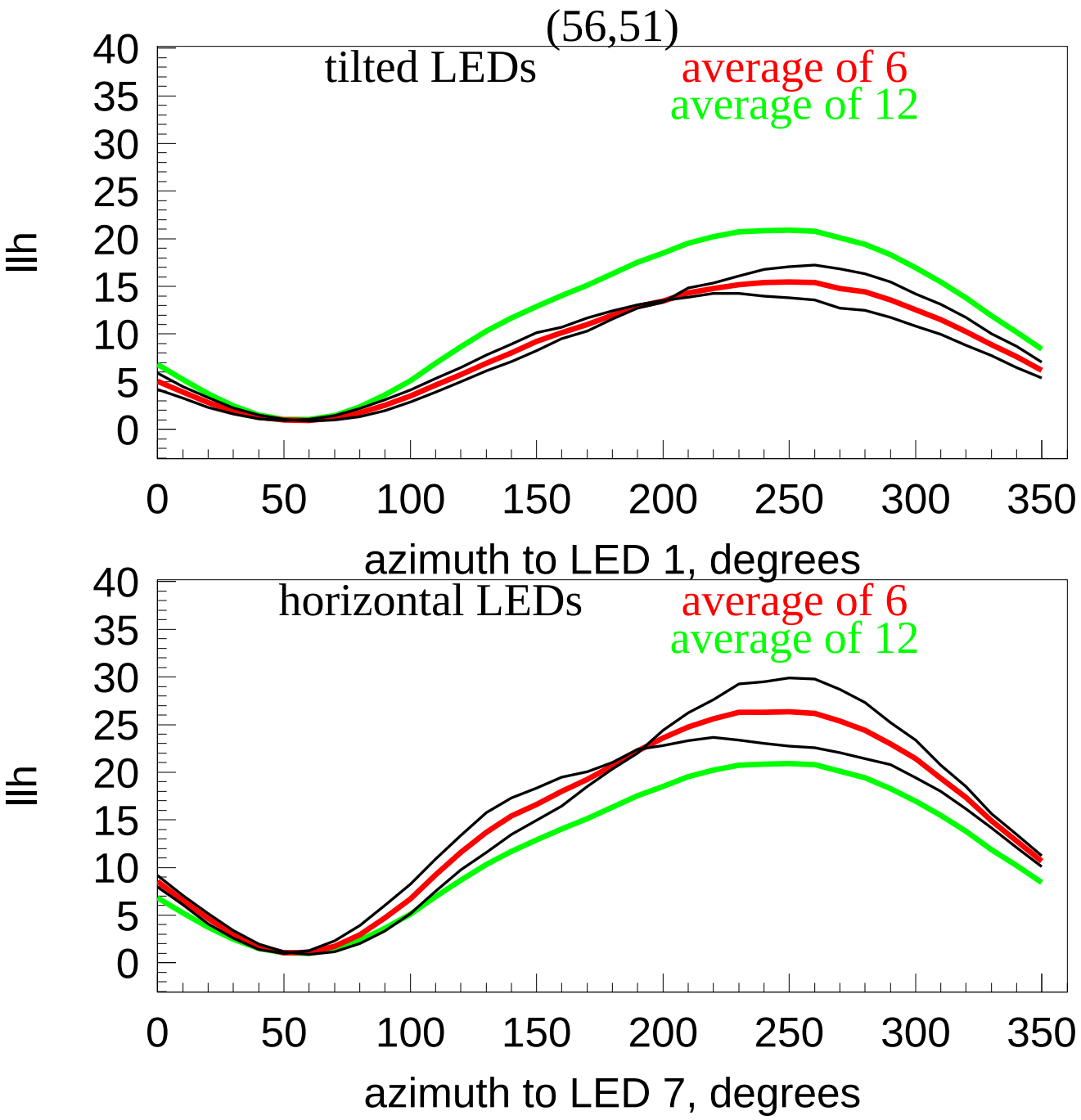

(55,56)
11
5
350
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

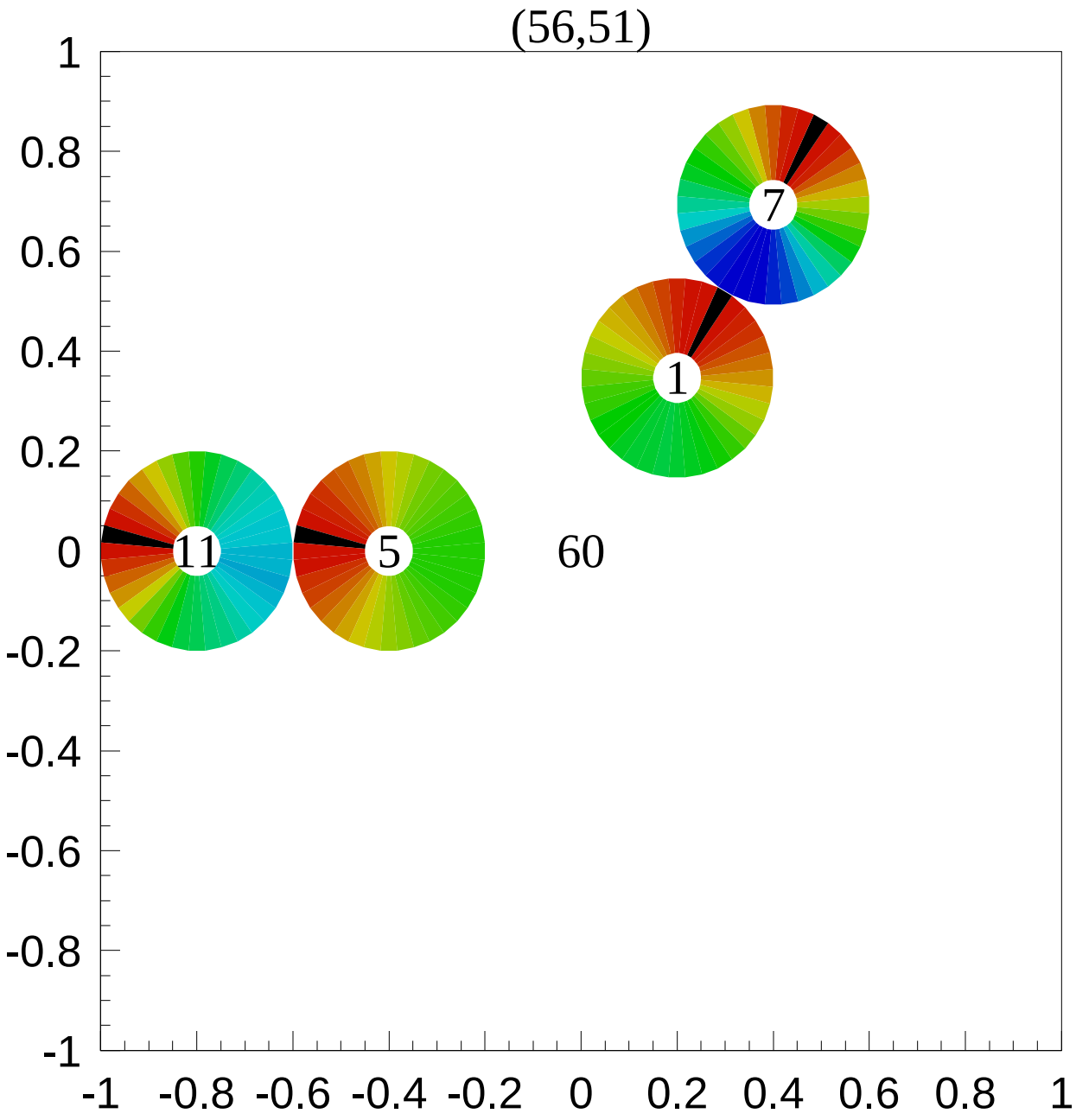

(56,1)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

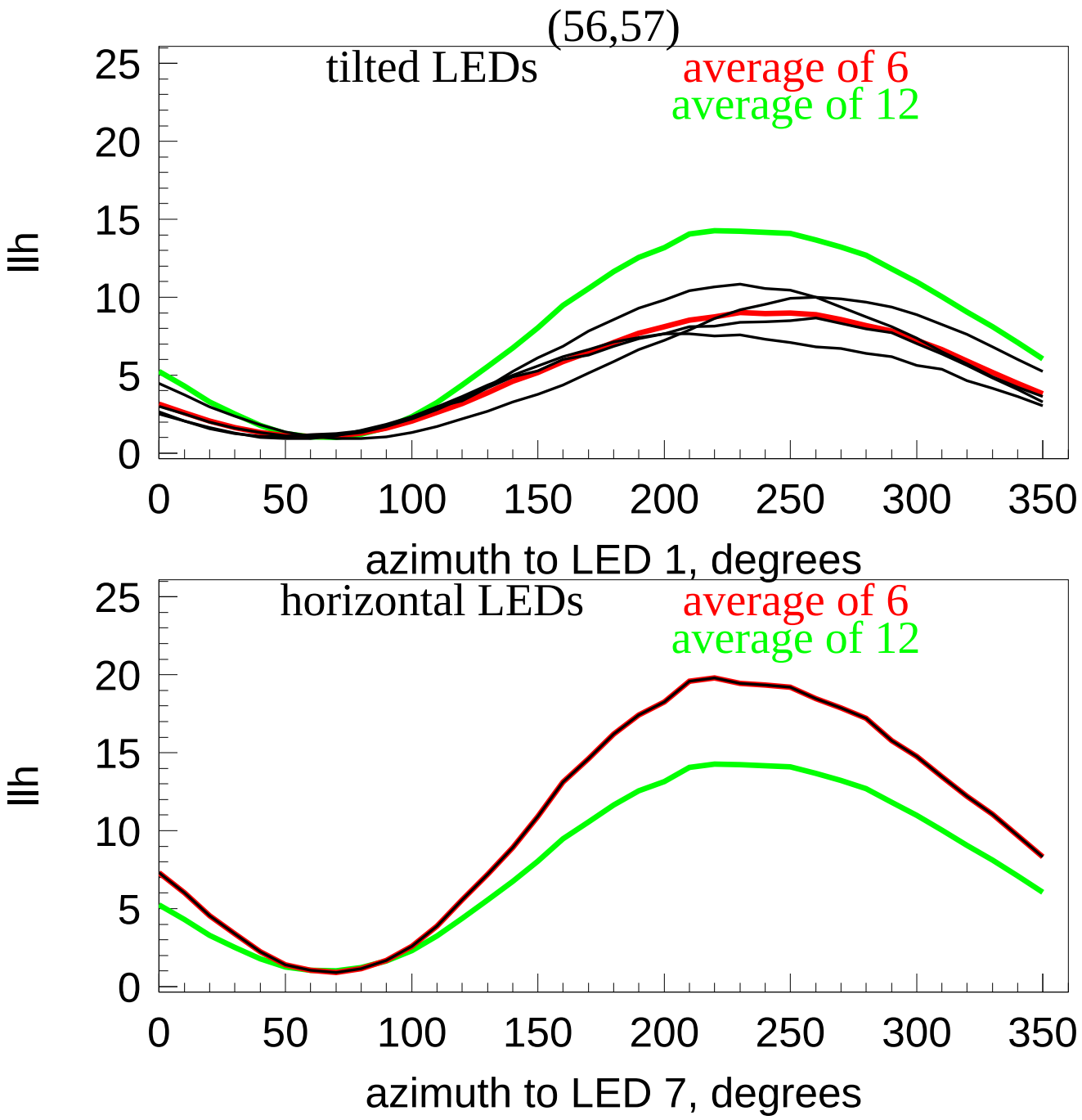

(56,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
1
2
12
6
110
3
9
5
4
11
10

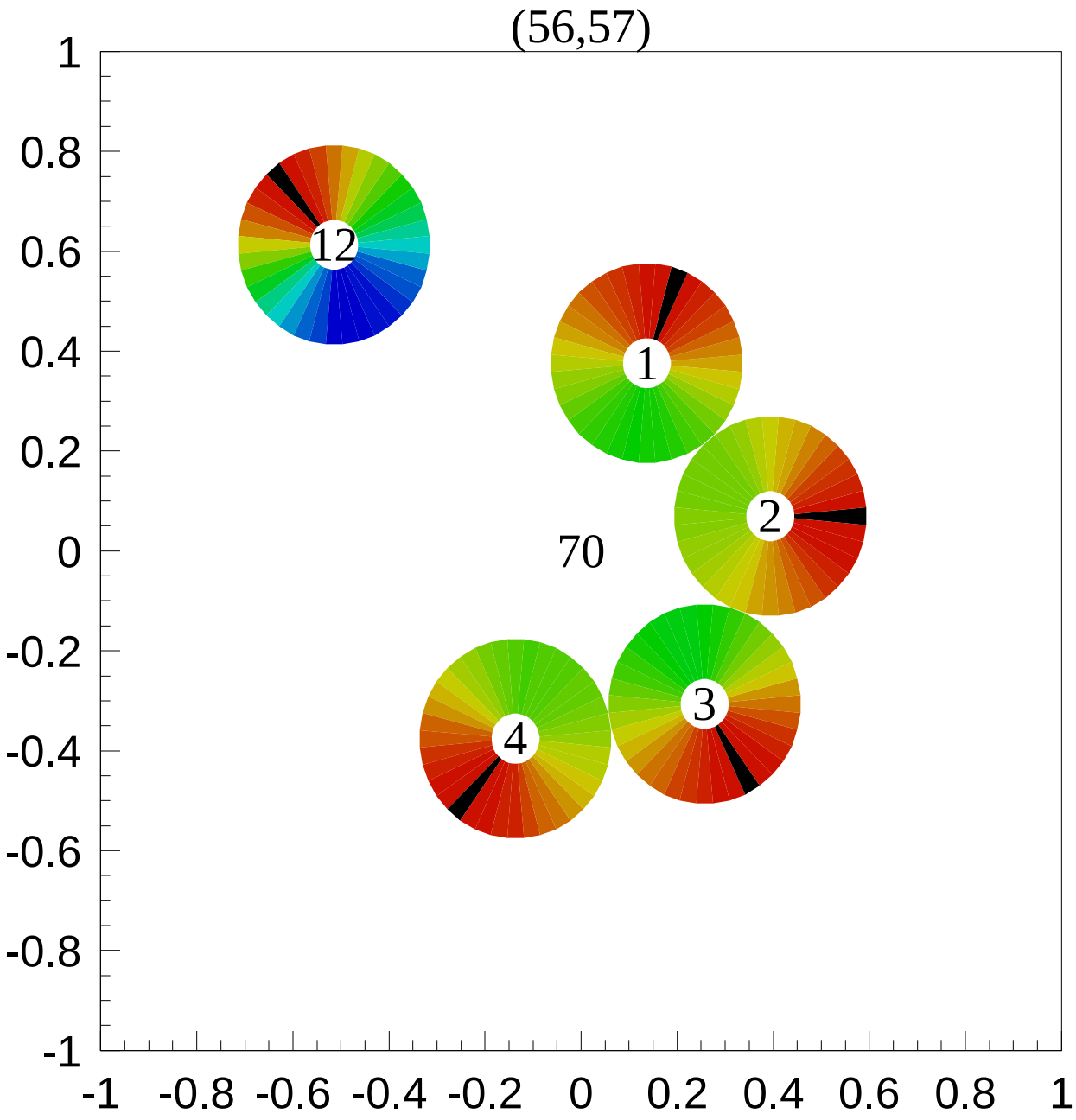

(56,22)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

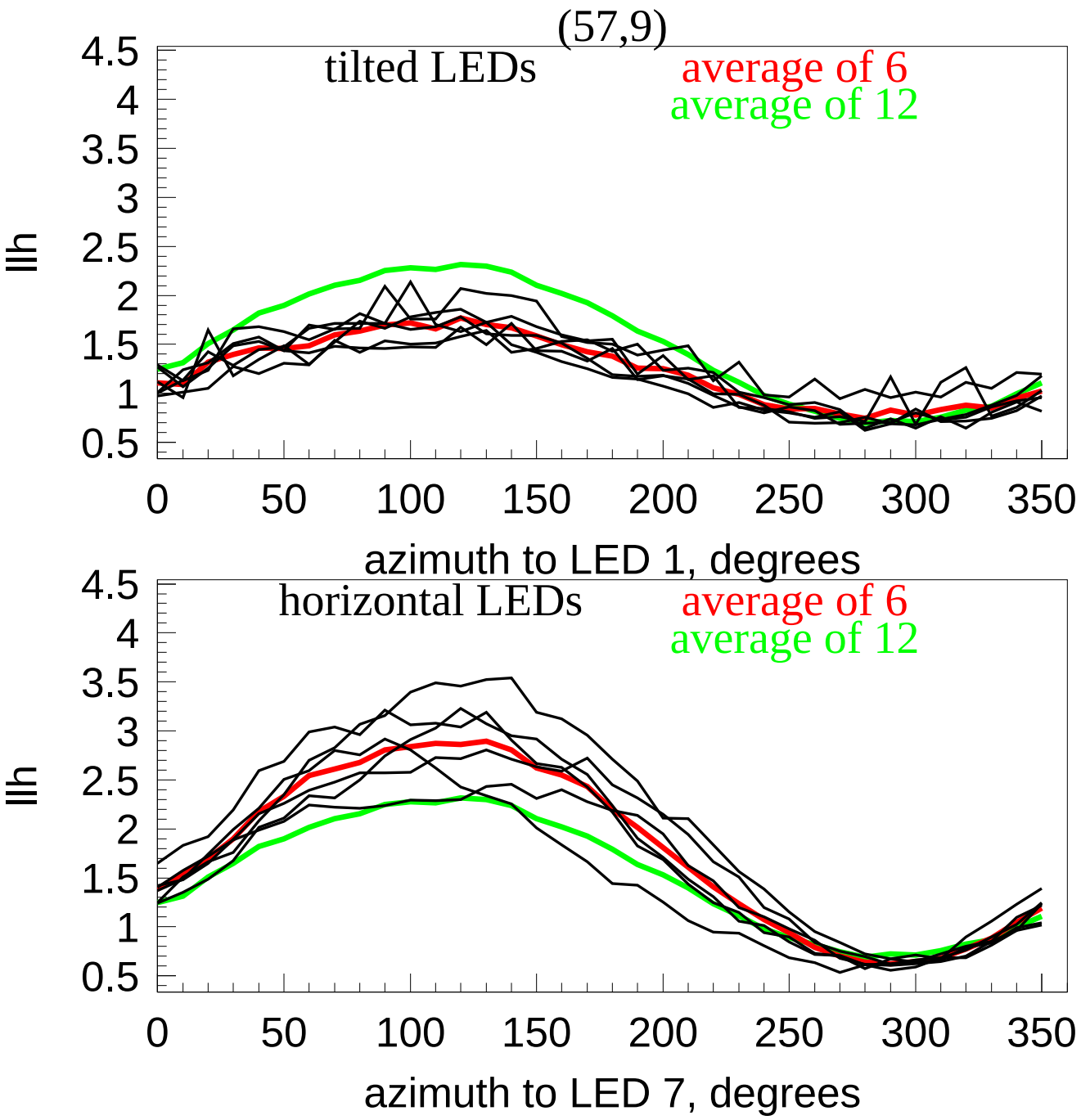

(56,22)
12
7
6
11
5
40
2
8
4
3
10
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

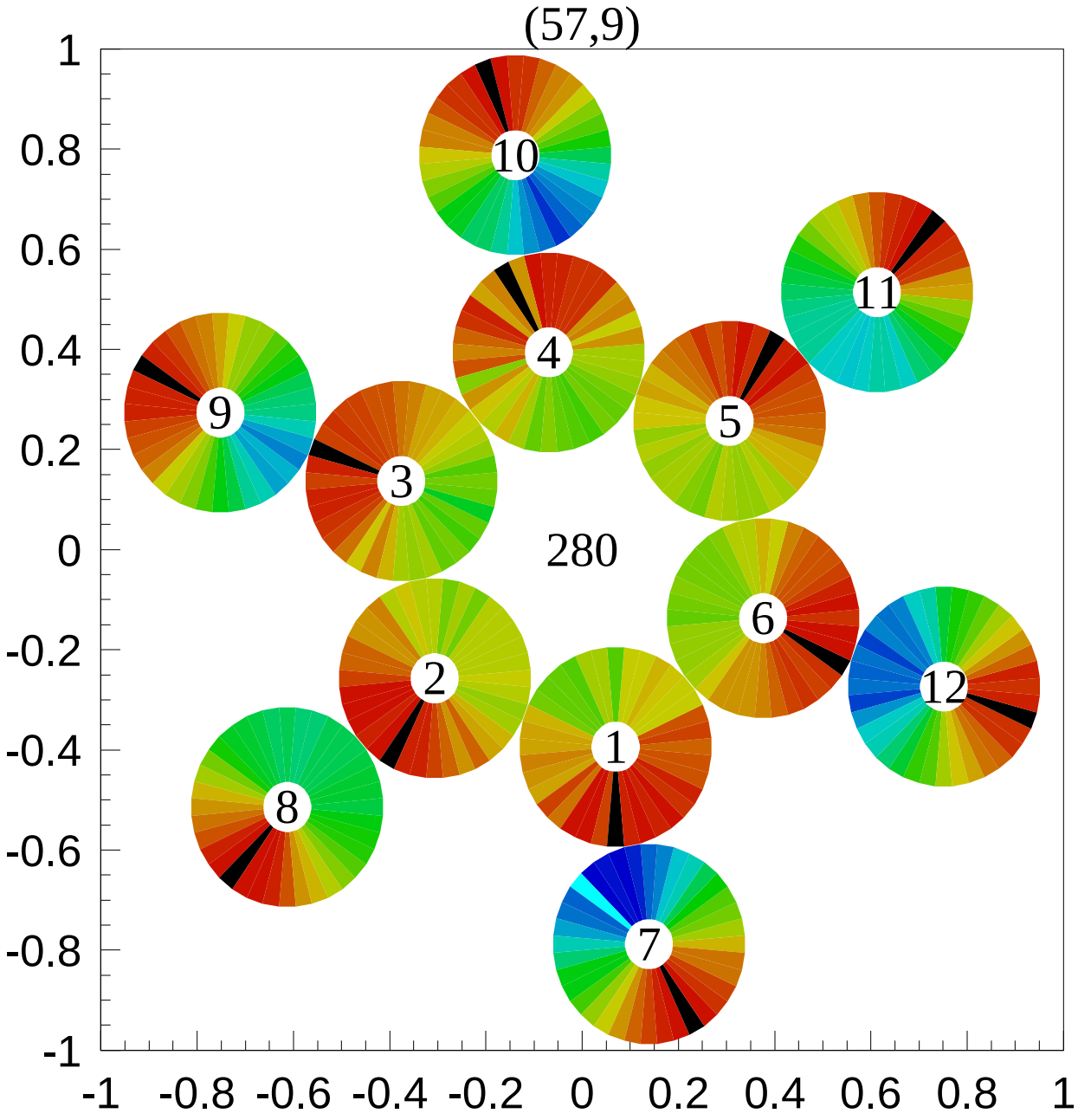

(56,51)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

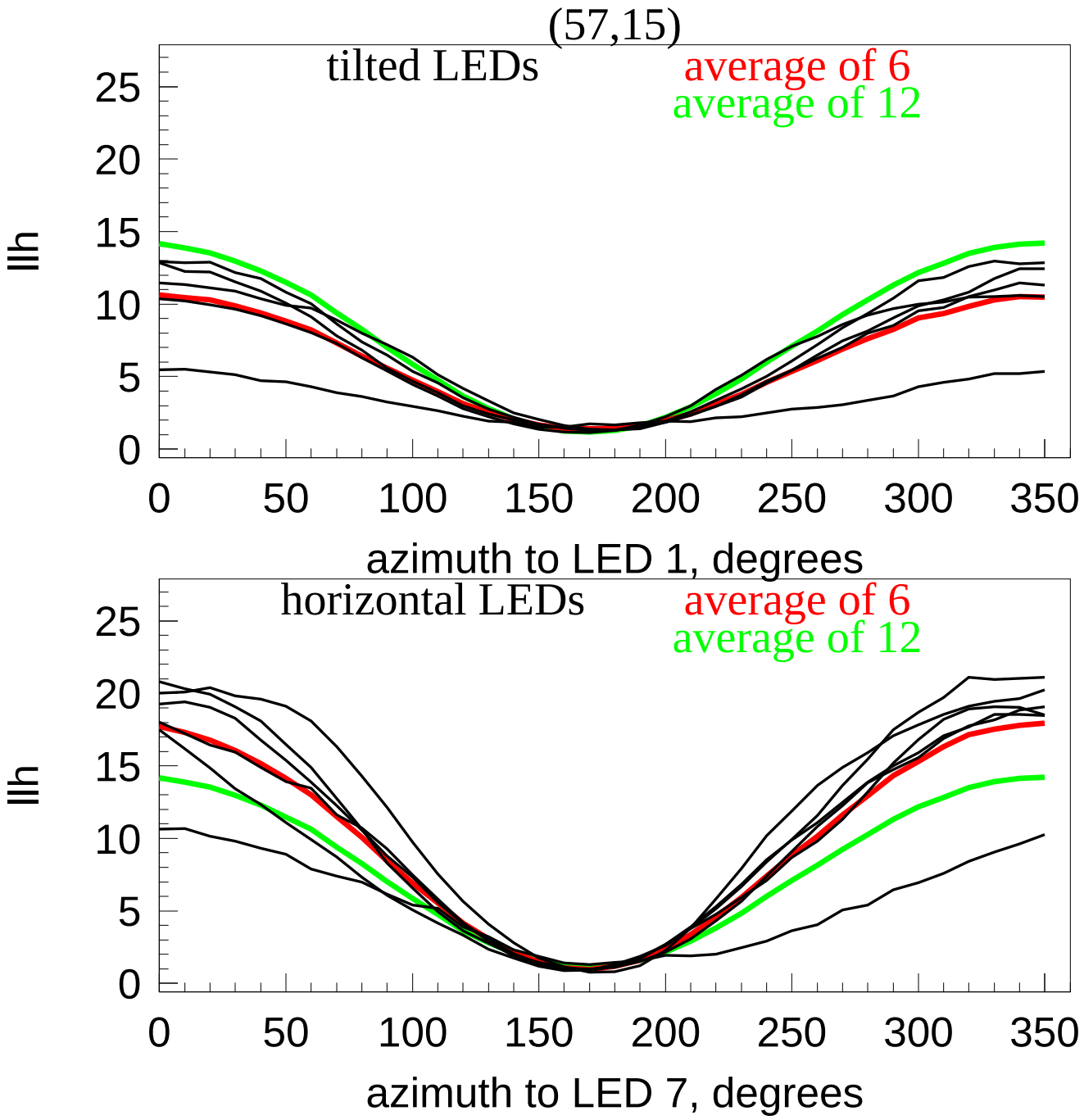

(56,51)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
11
5
60

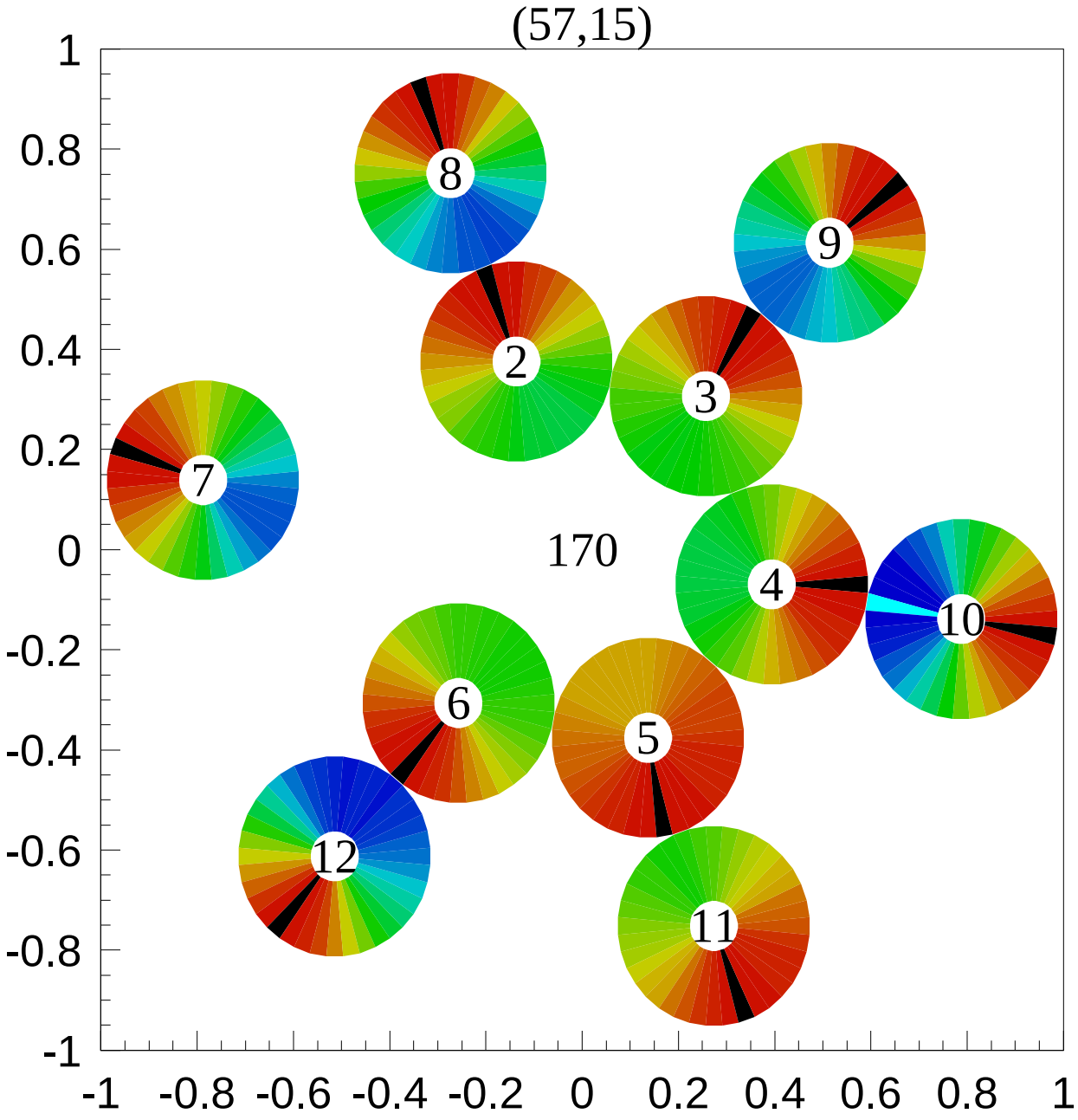

(56,57)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

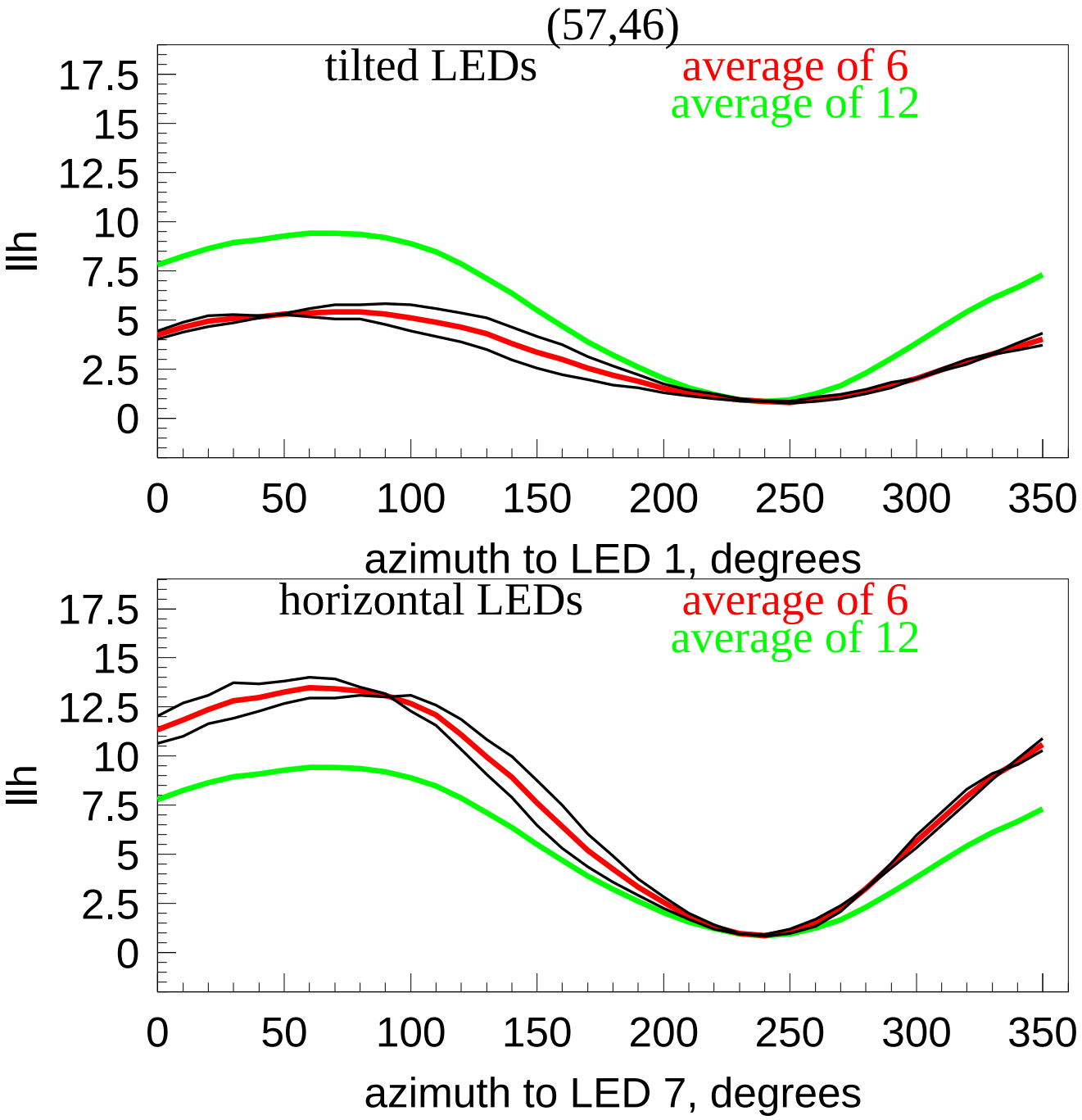

(56,57)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
1
2
70
3
4

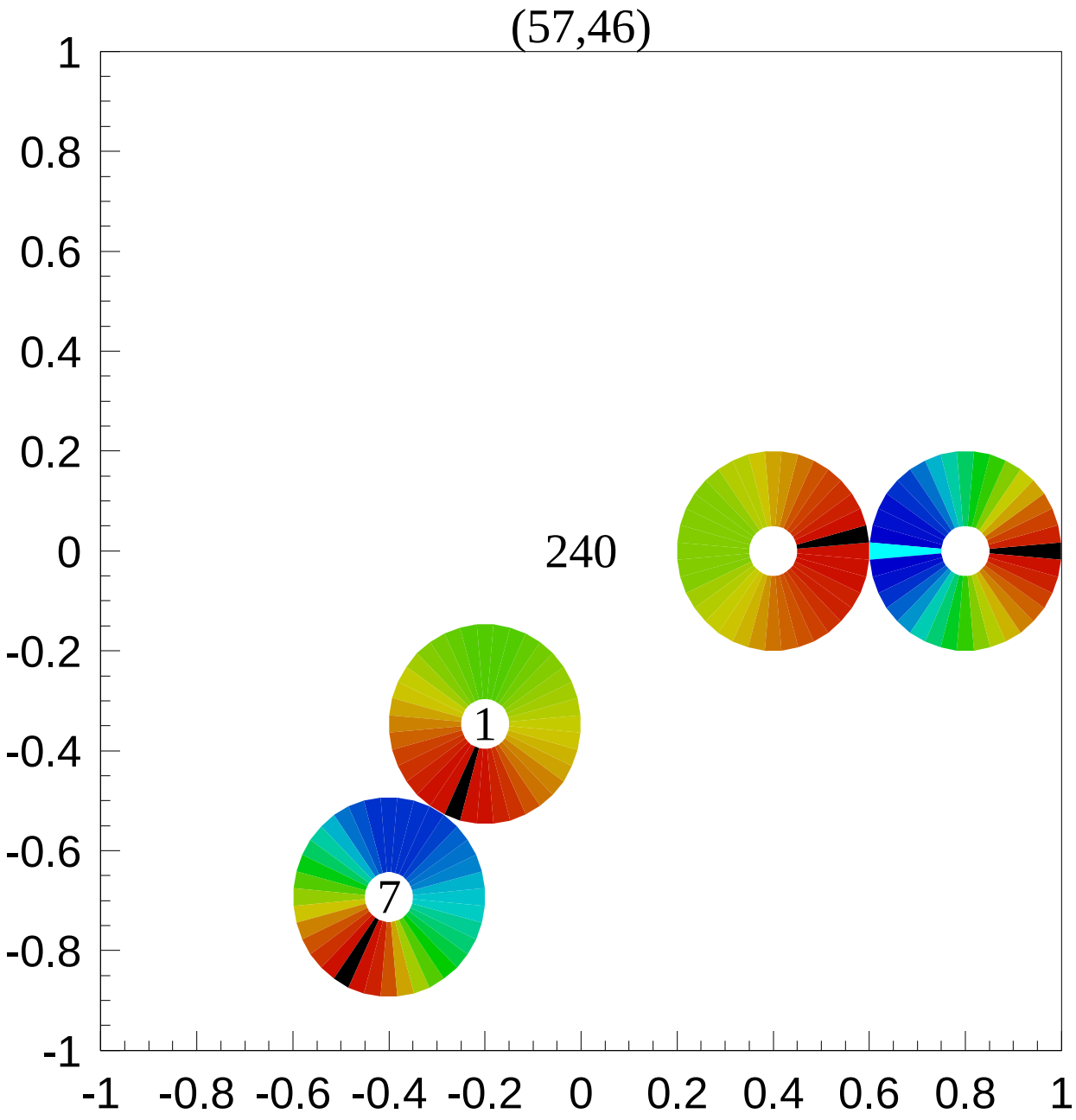

(57,9)
tilted LEDs
average of 6
average of 12
Ilh
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

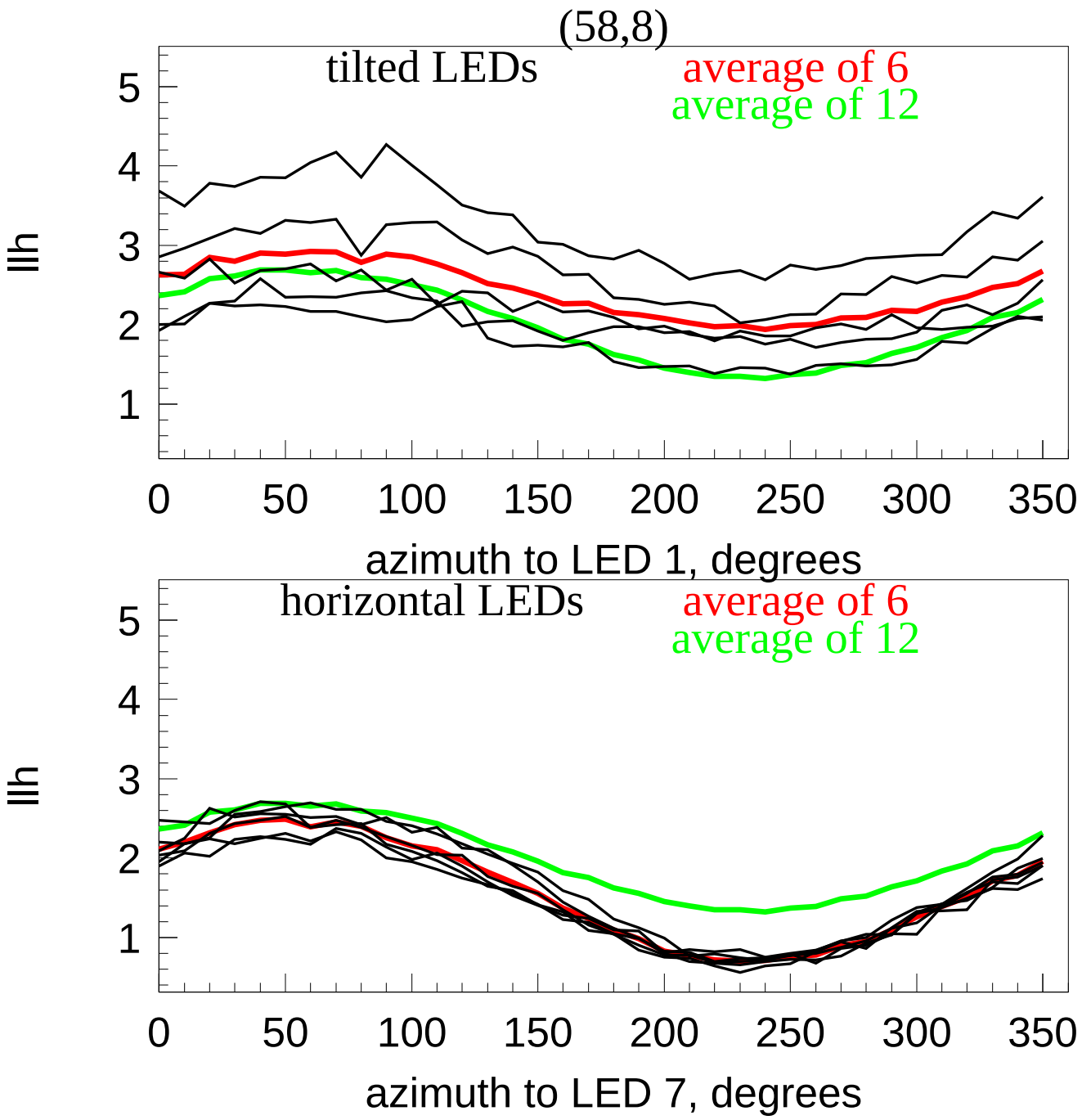

(57,9)
280
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

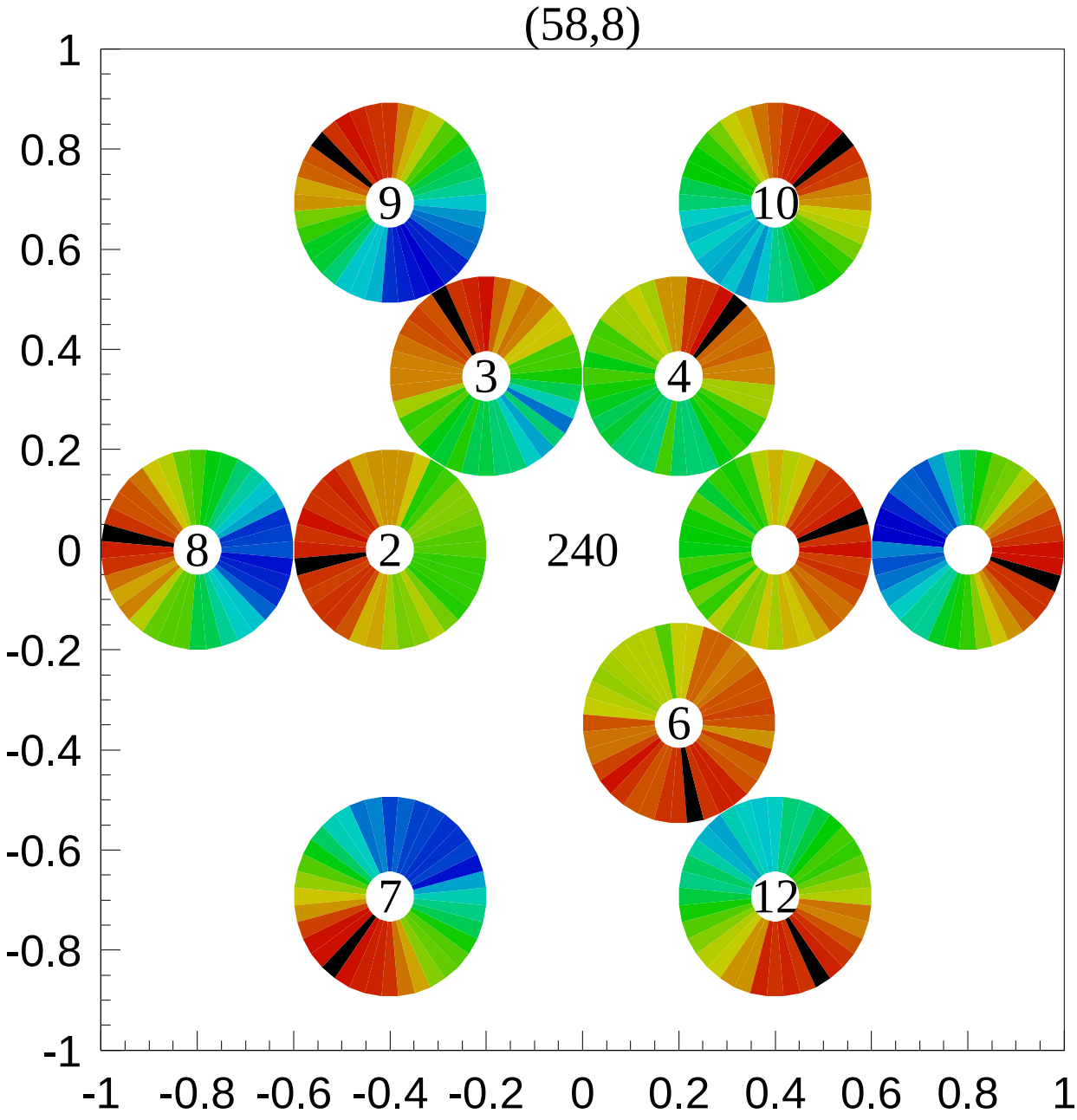

(57,15)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

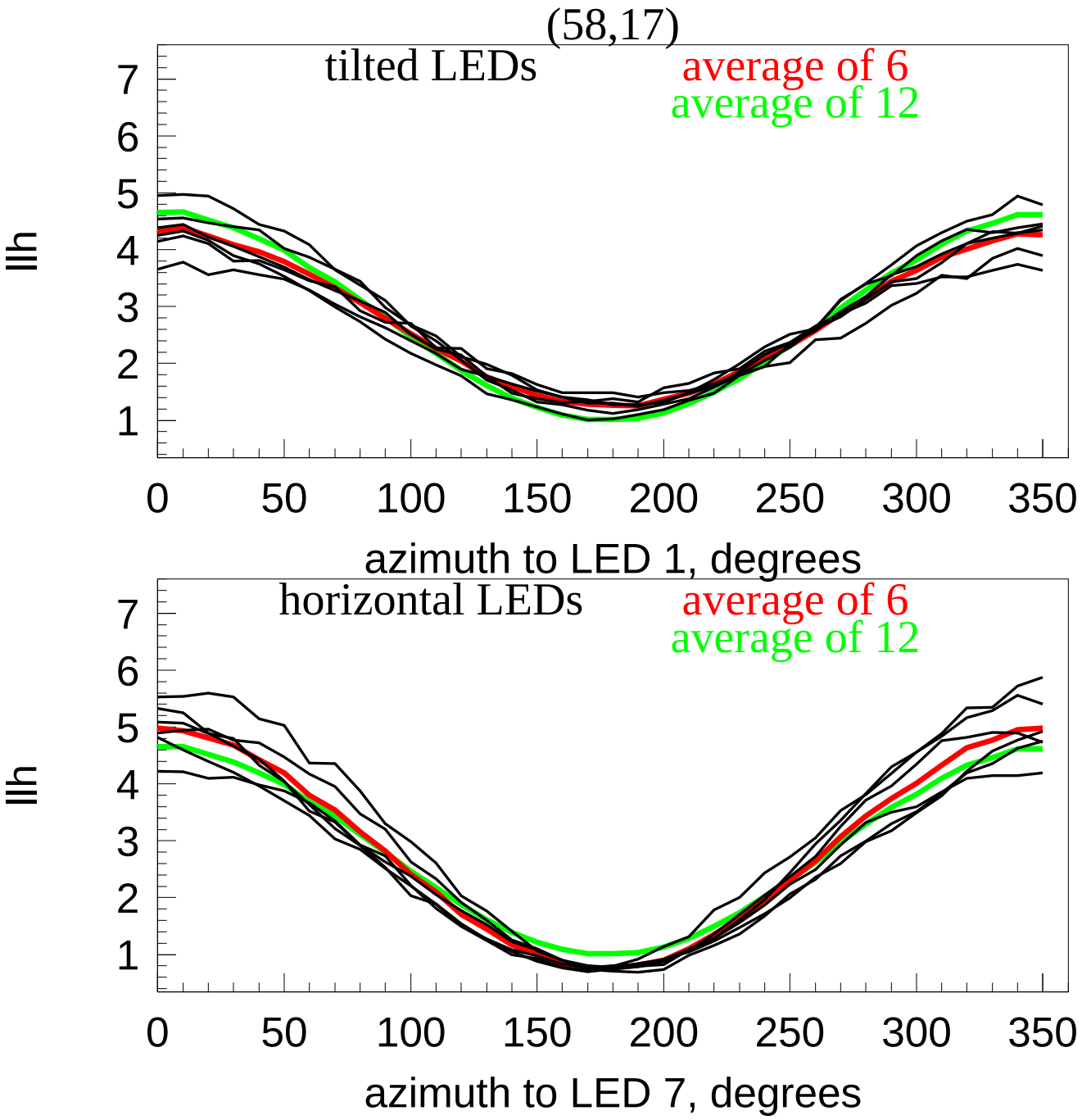

(57,15)
170
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
2
3
4
5
6
7
8
9
10
11
12

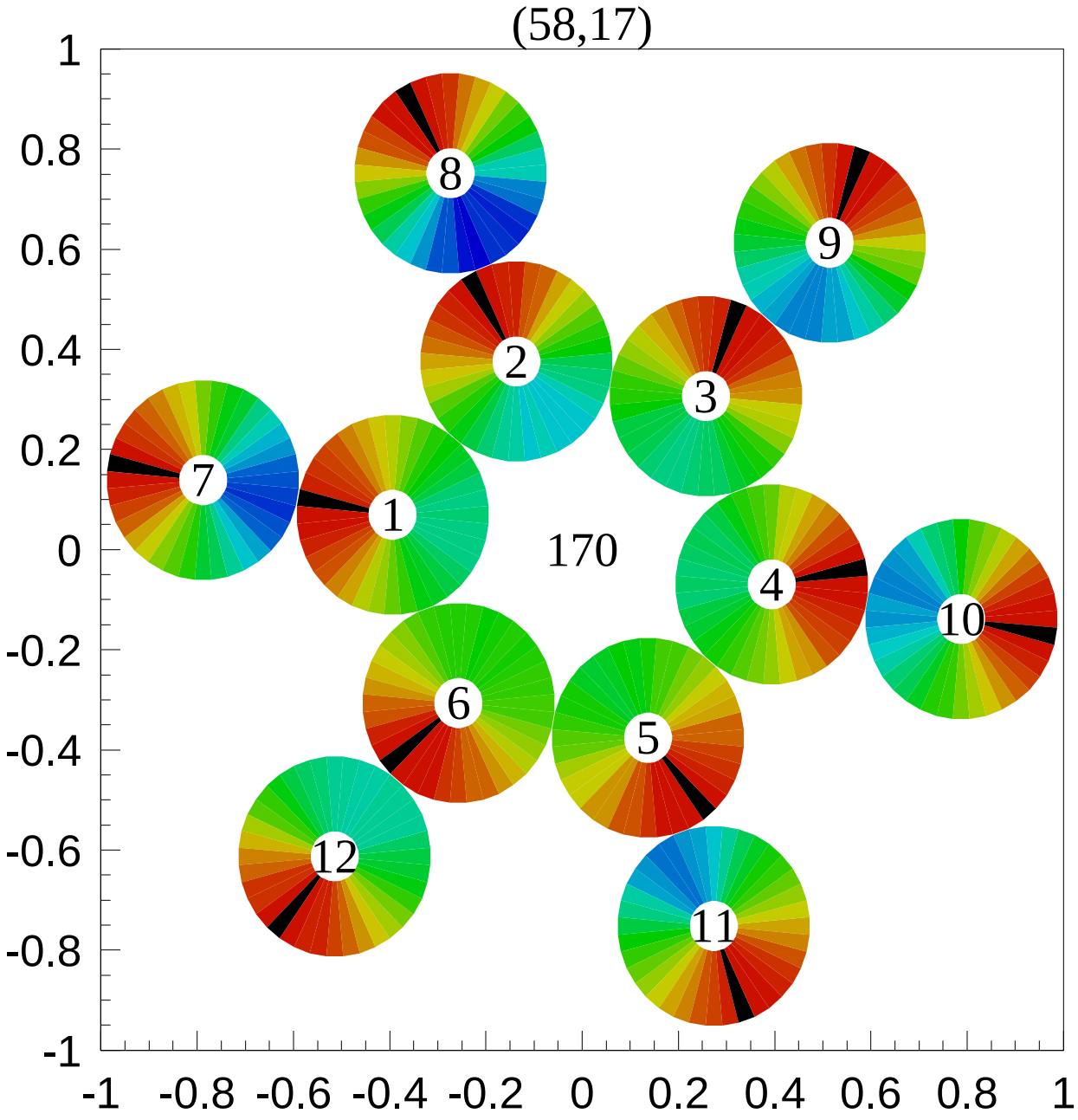

(57,46)
tilted LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
Ilh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
Ilh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

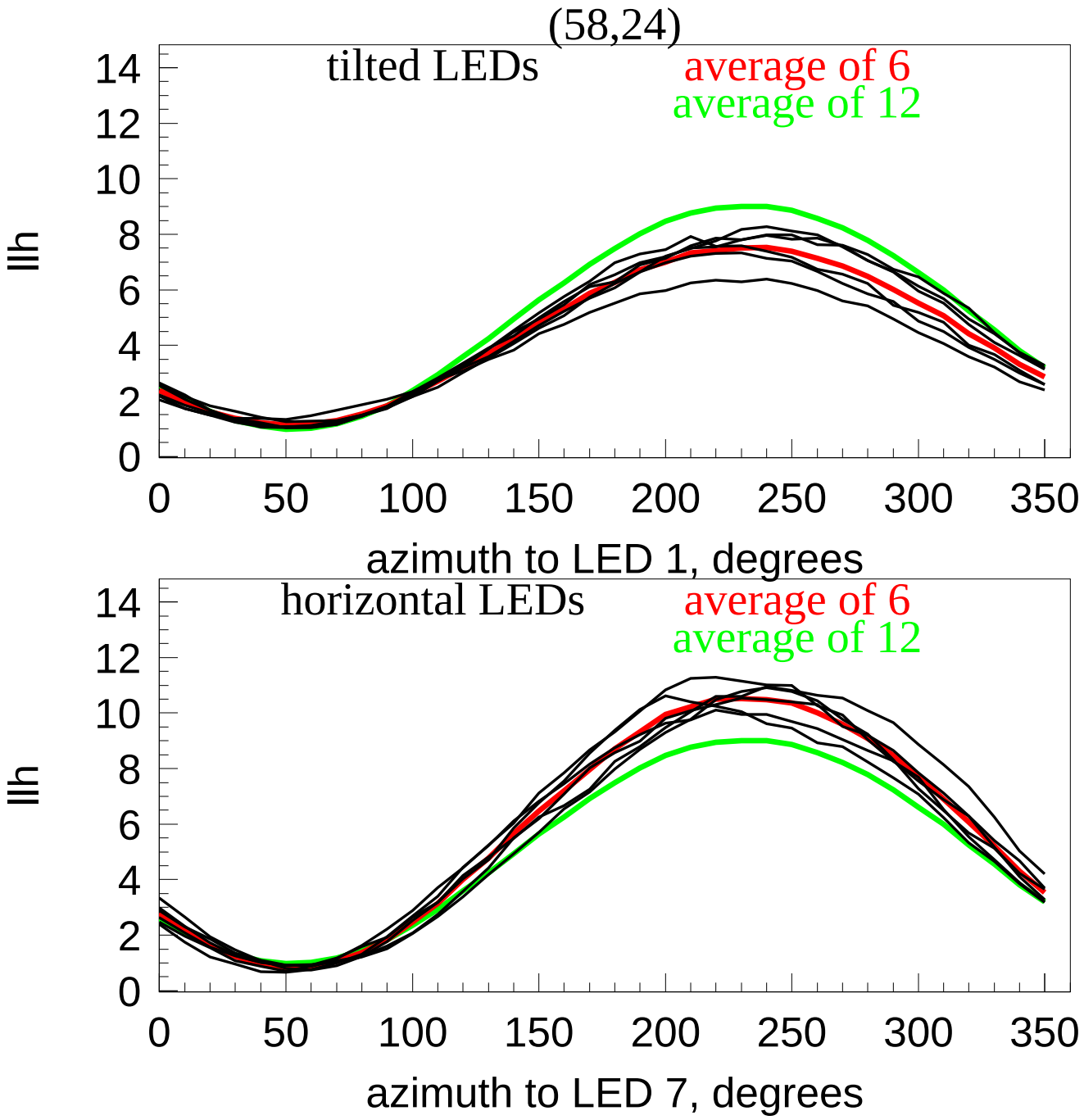

(57,46)
240
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

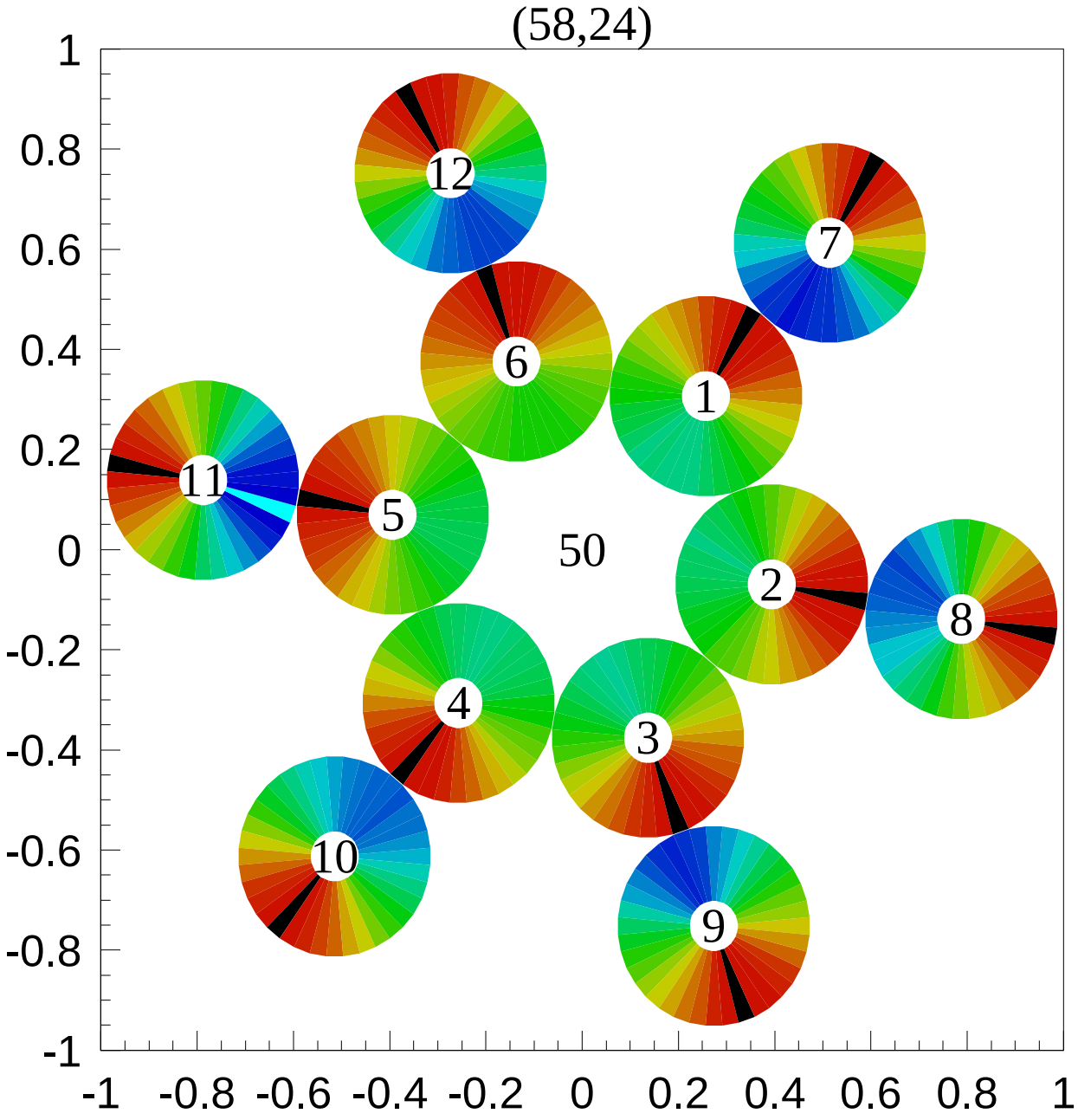

(58,8)
tilted LEDs
average of 6
average of 12
llh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

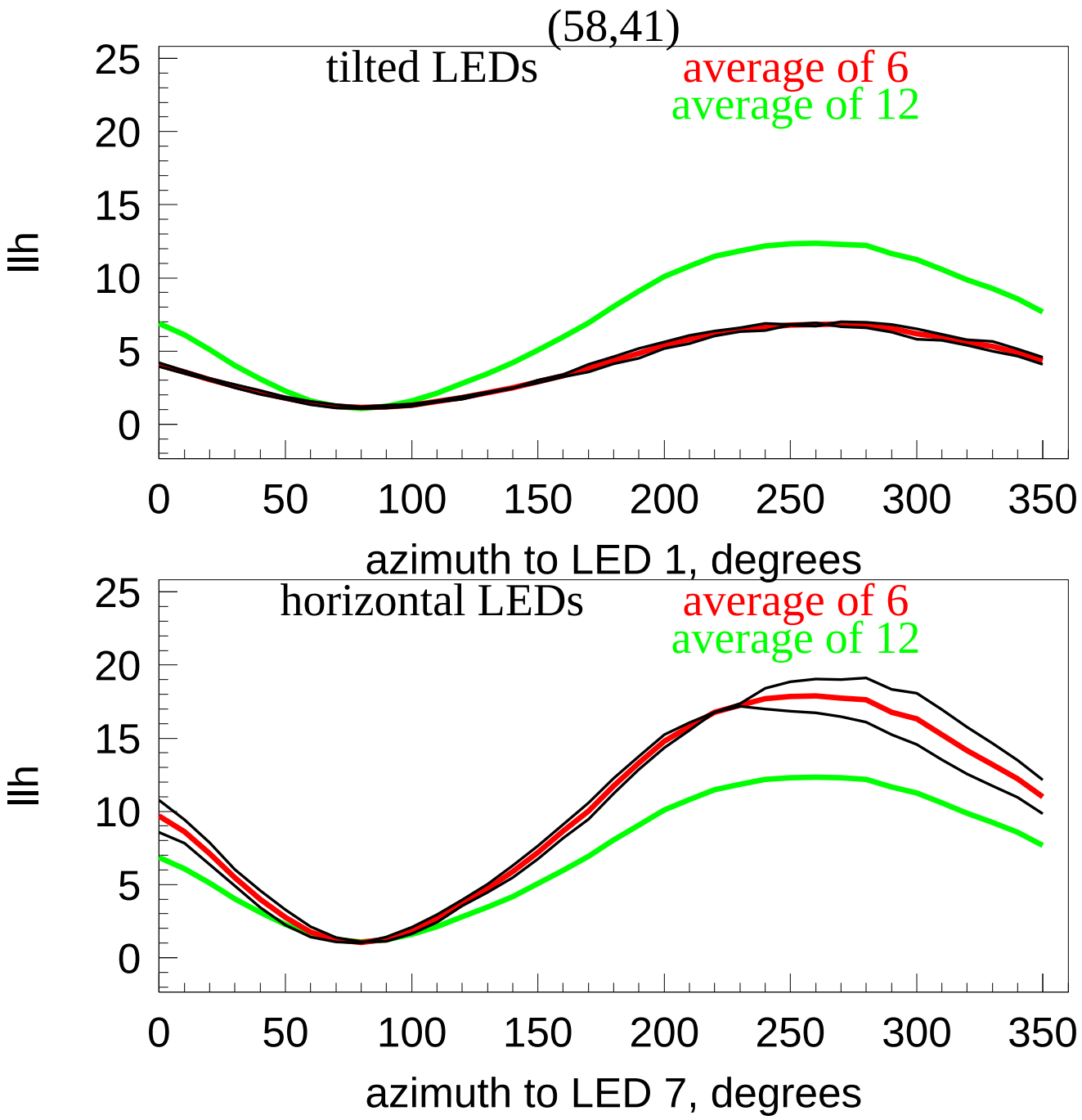

(58,8)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
10
3
4
8
2
240
6
7
12

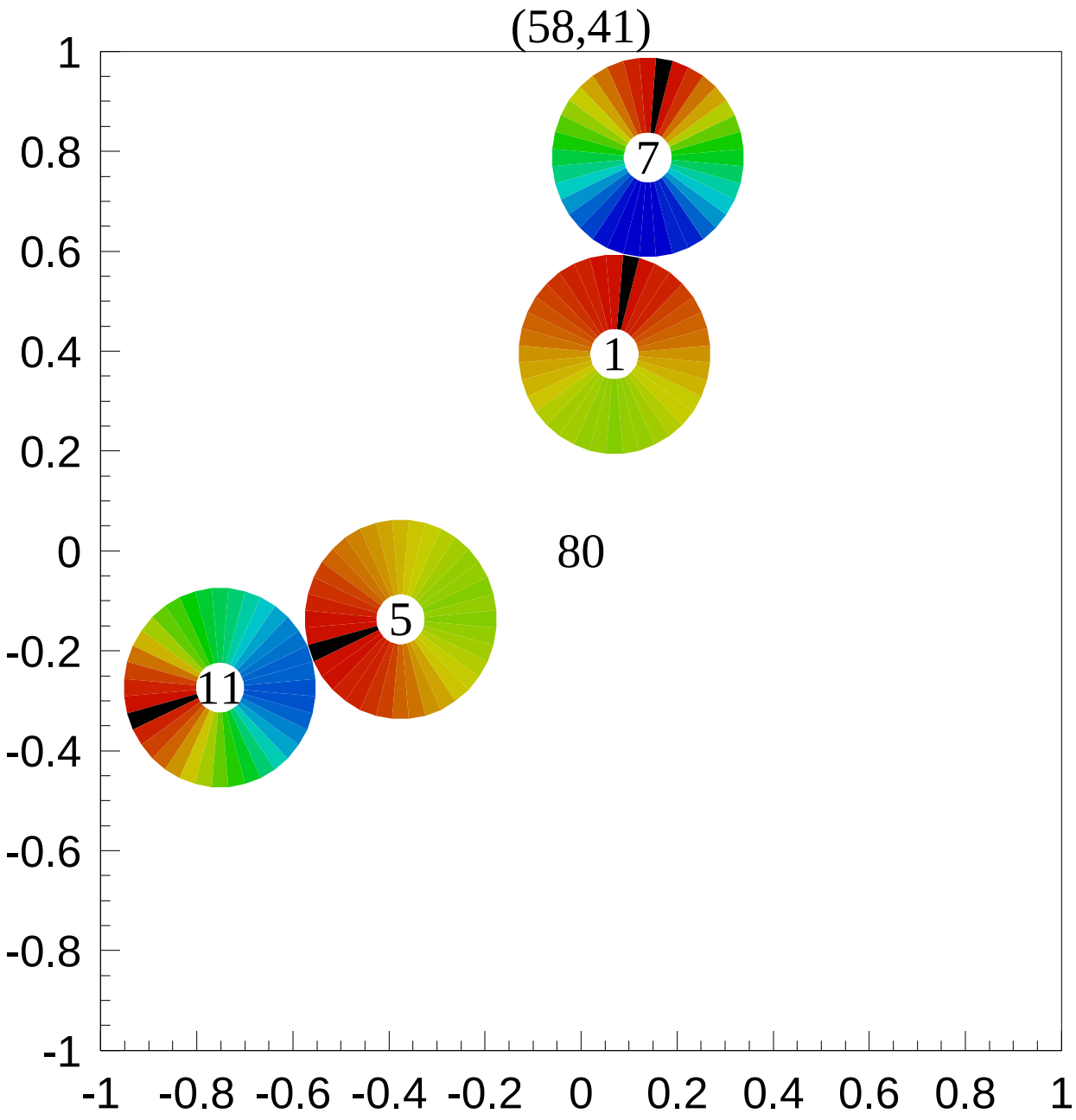

(58,17)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

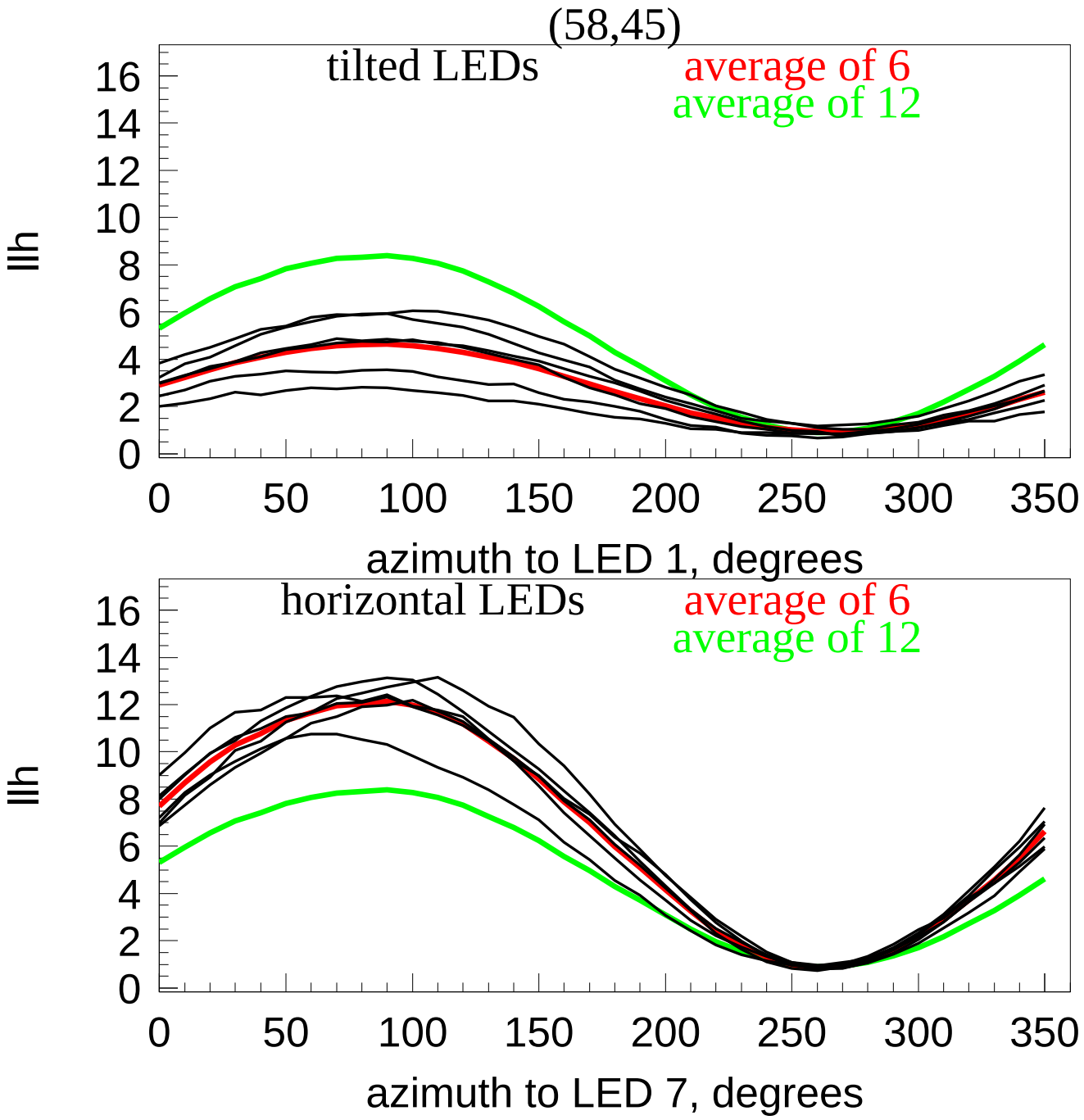

(58,17)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
9
2
3
7
1
170
4
10
6
5
12
11

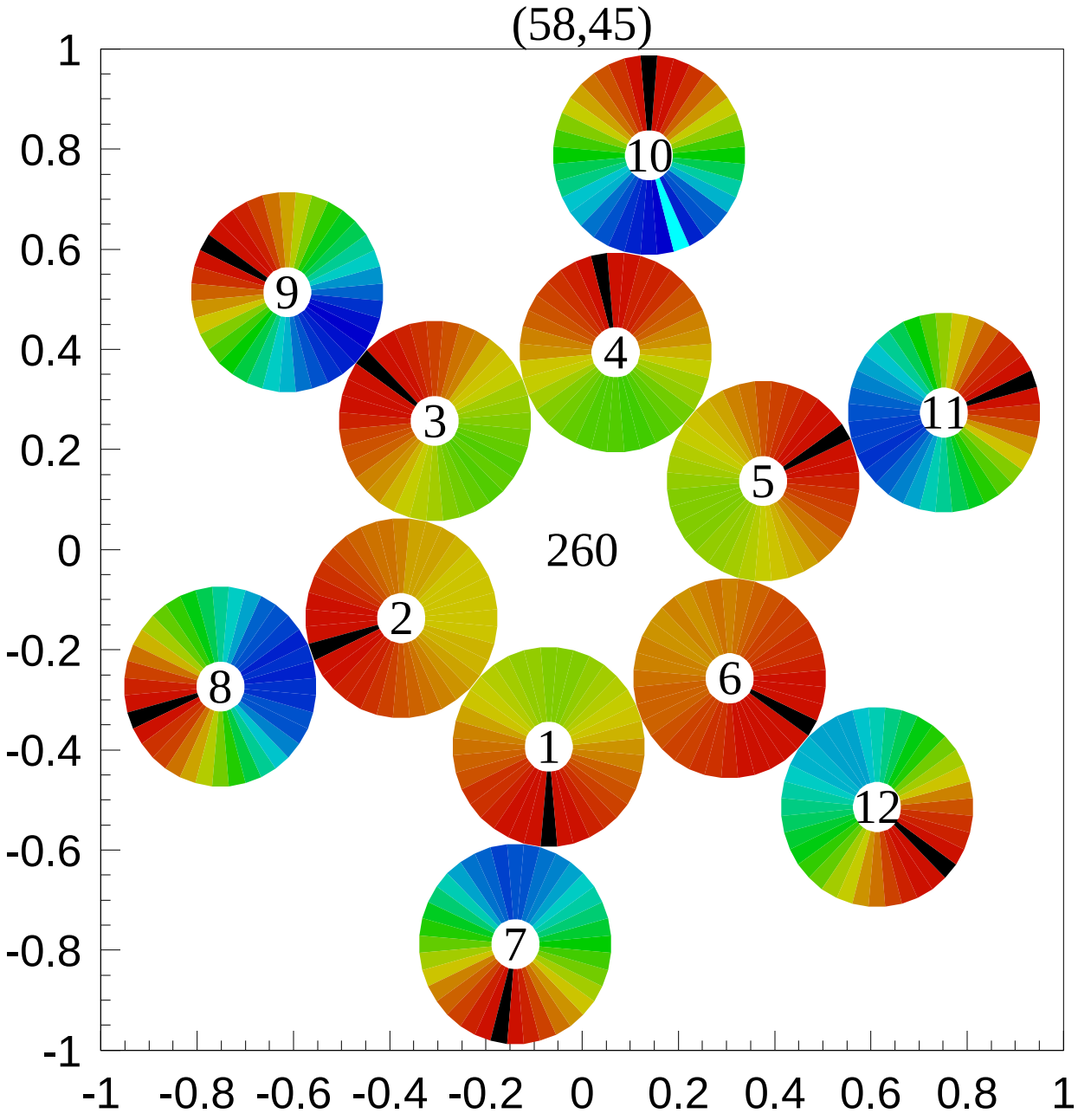

(58,24)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

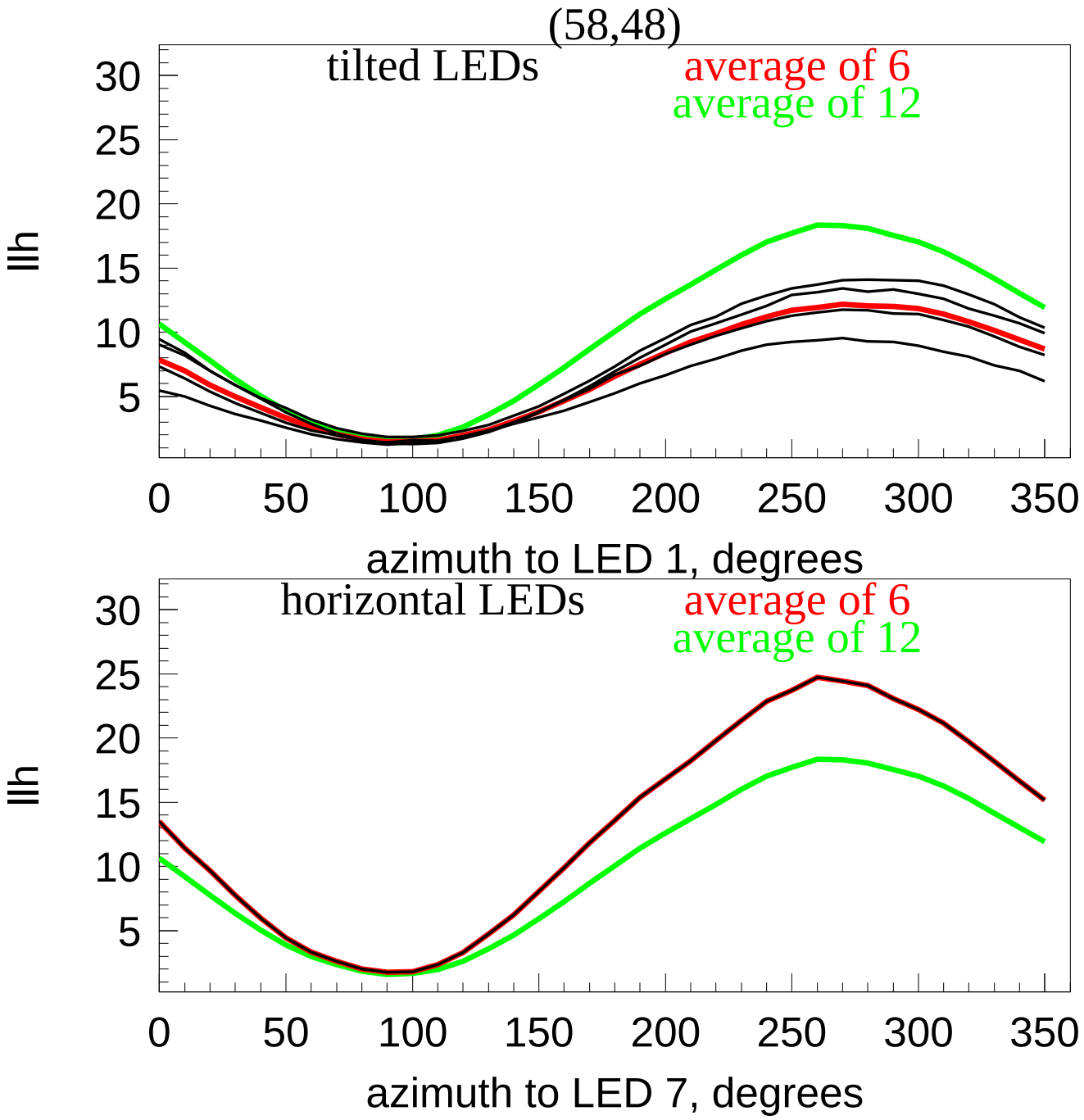

(58,24)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
7
6
1
11
5
50
2
8
4
3
10
9

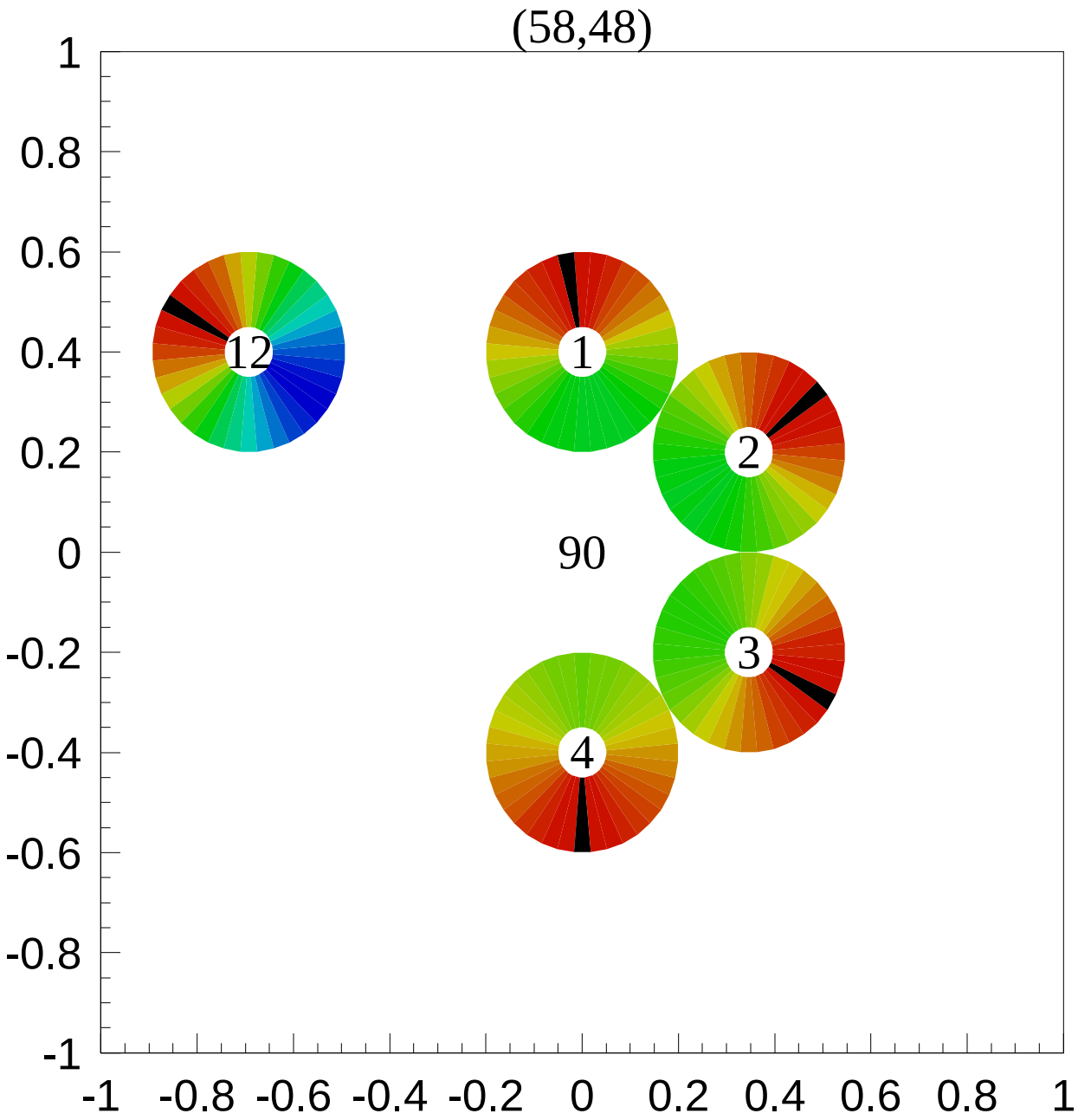

(58,41)
tilted LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

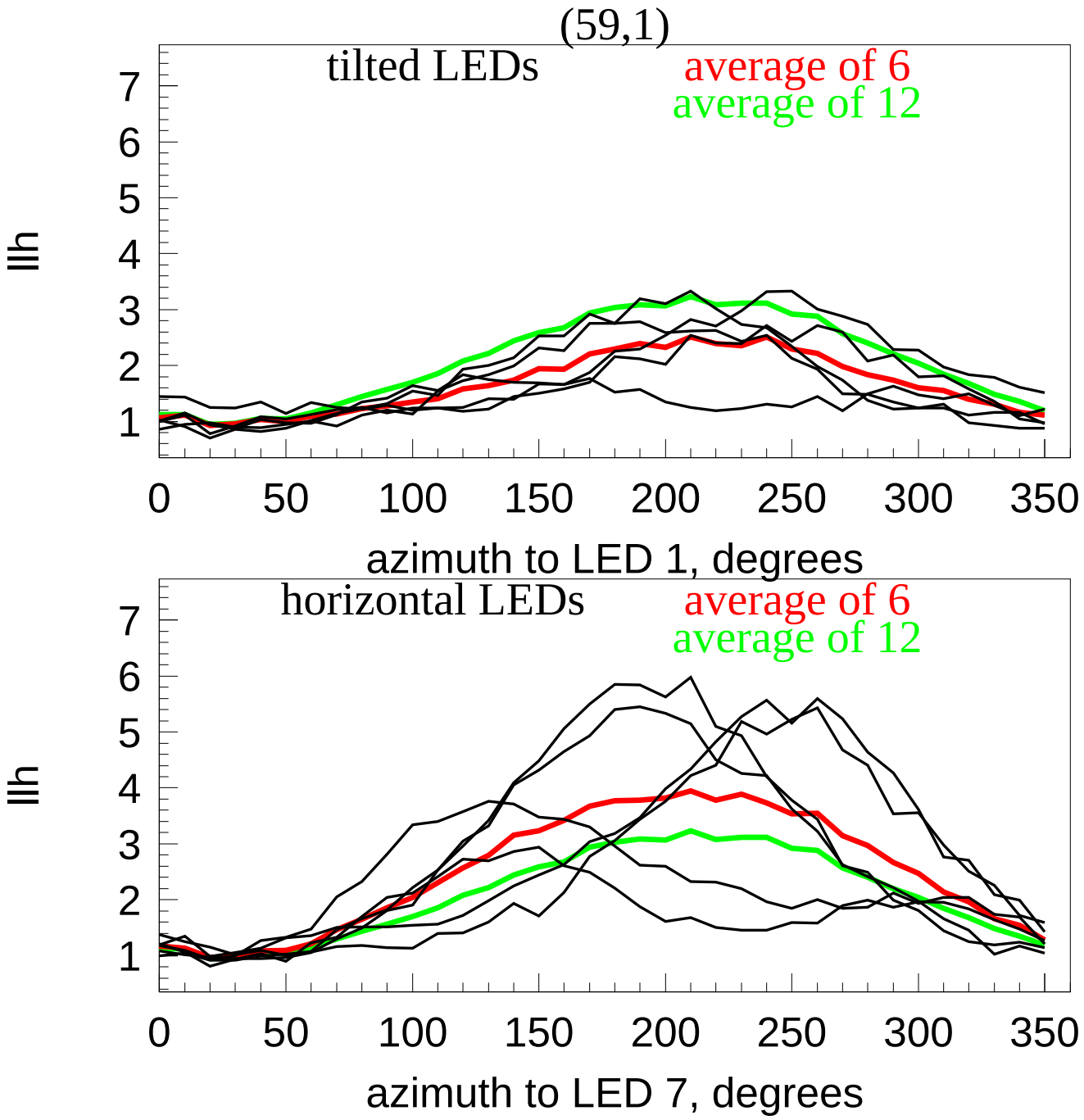

(58,41)
7
1
80
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

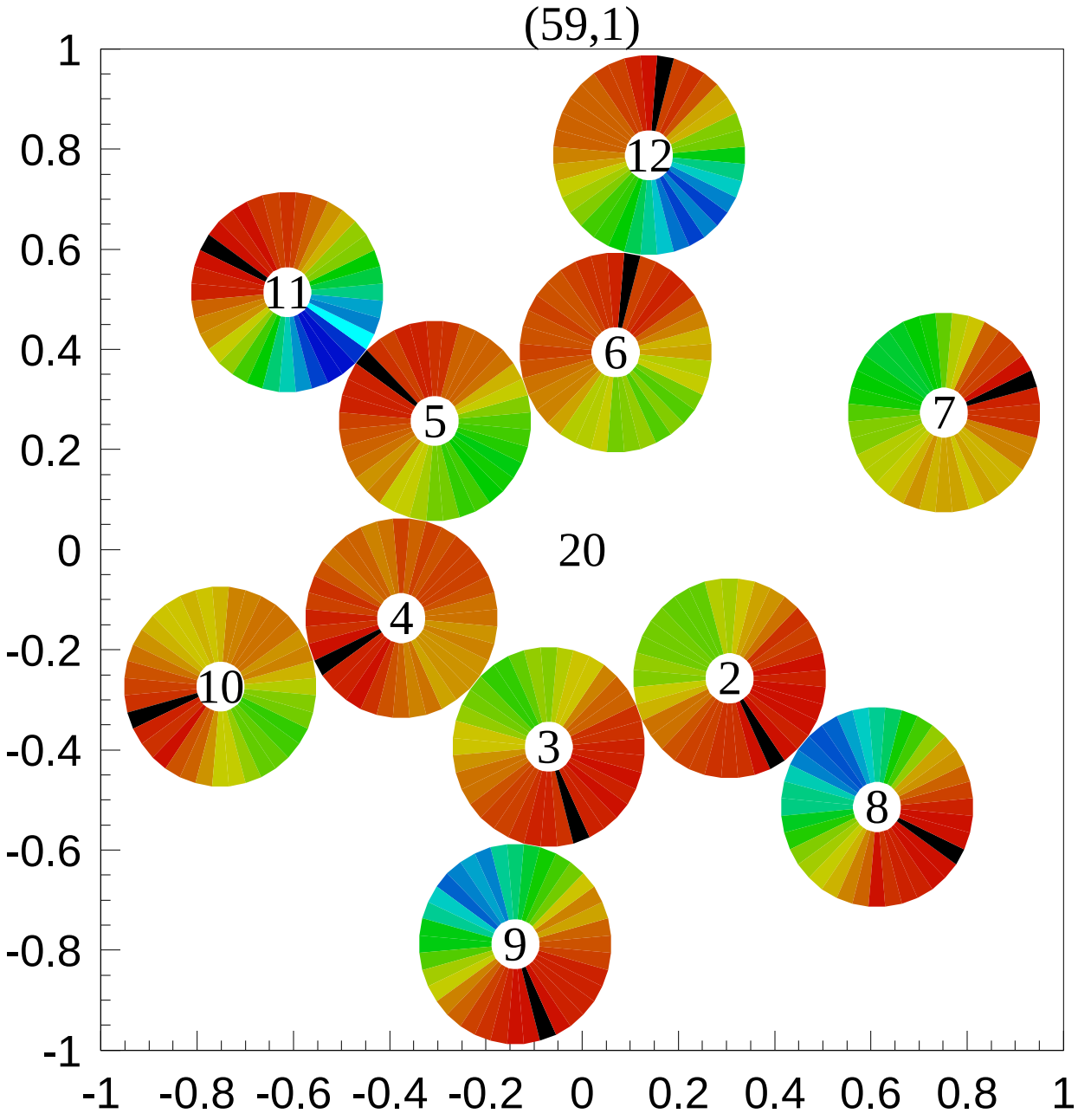

(58,45)
tilted LEDs
average of 6
average of 12
Ilh
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

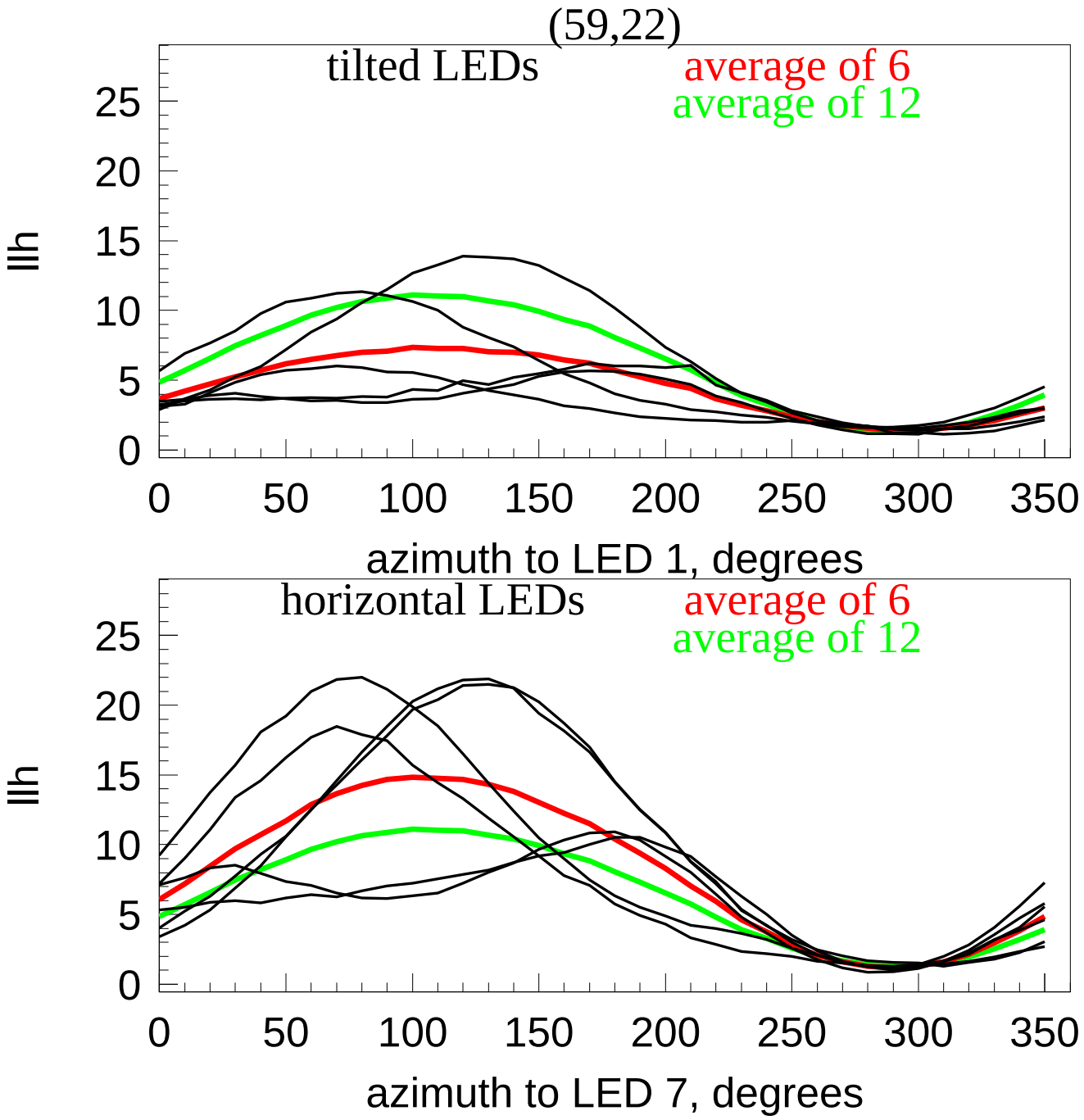

(58,45)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
9
4
3
11
5
260
2
8
6
1
12
7

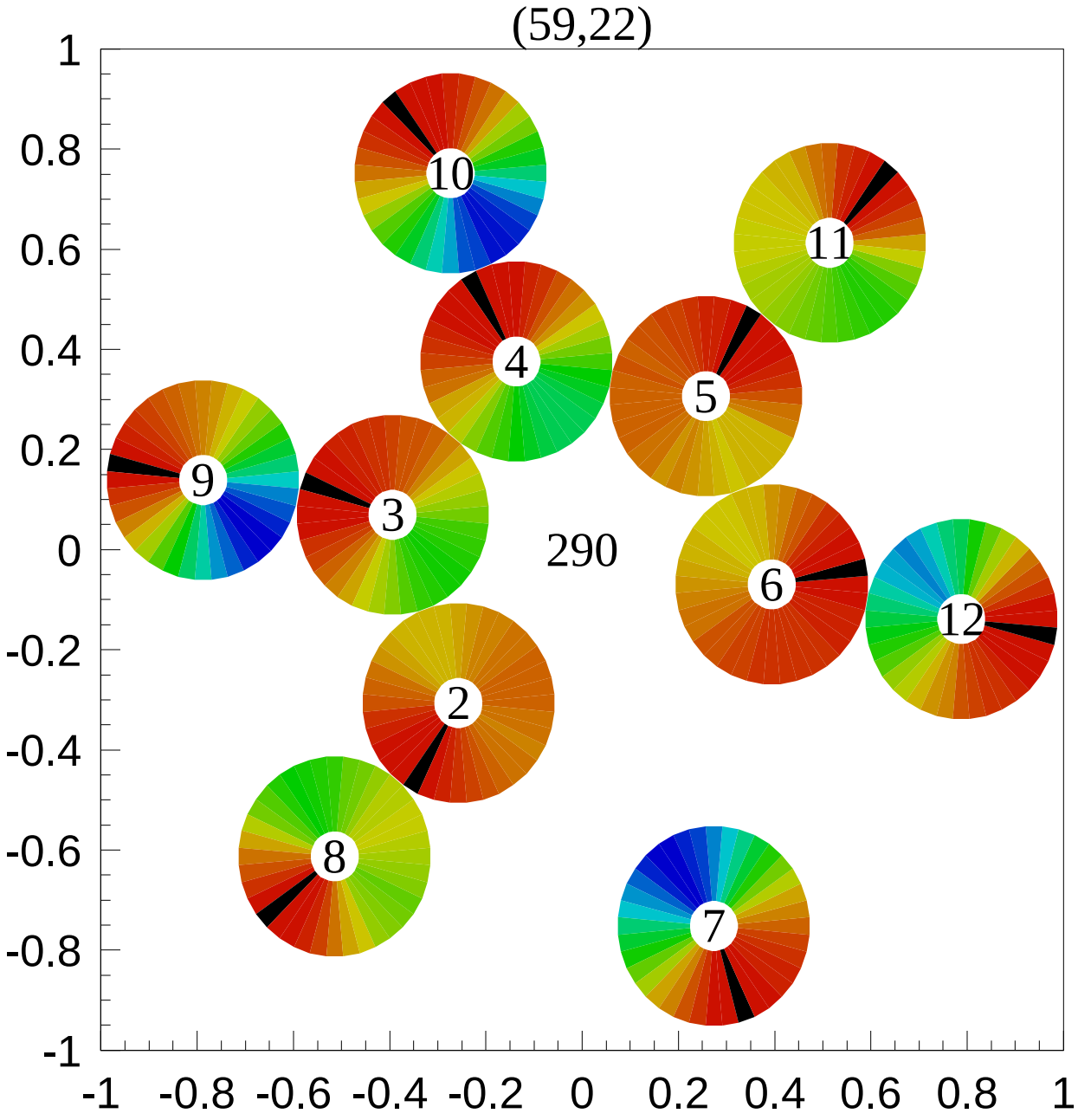

(58,48)
tilted LEDs
average of 6
average of 12
Ilh
30
25
20
15
10
5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
30
25
20
15
10
5
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

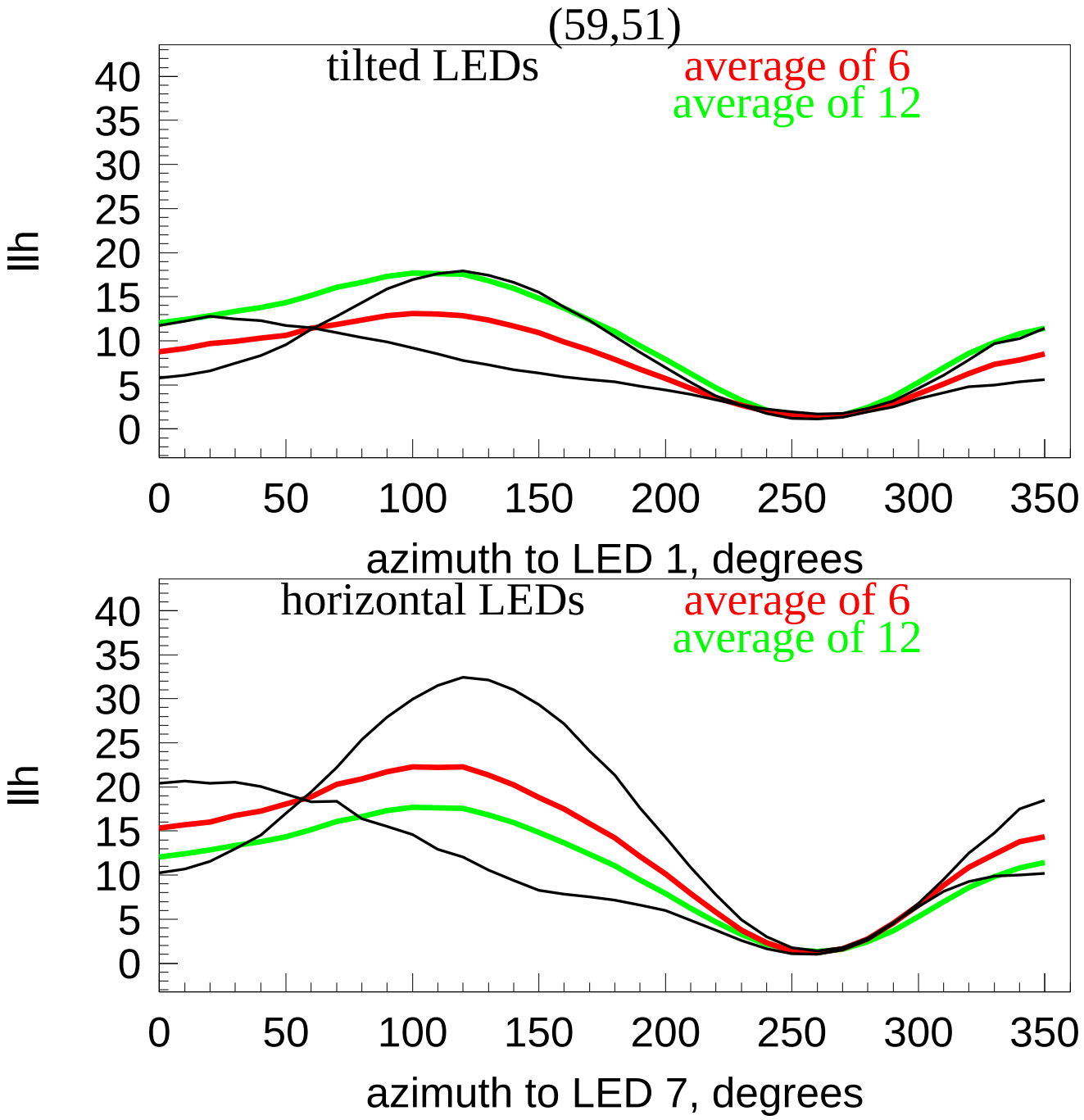

(58,48)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
1
2
90
3
4

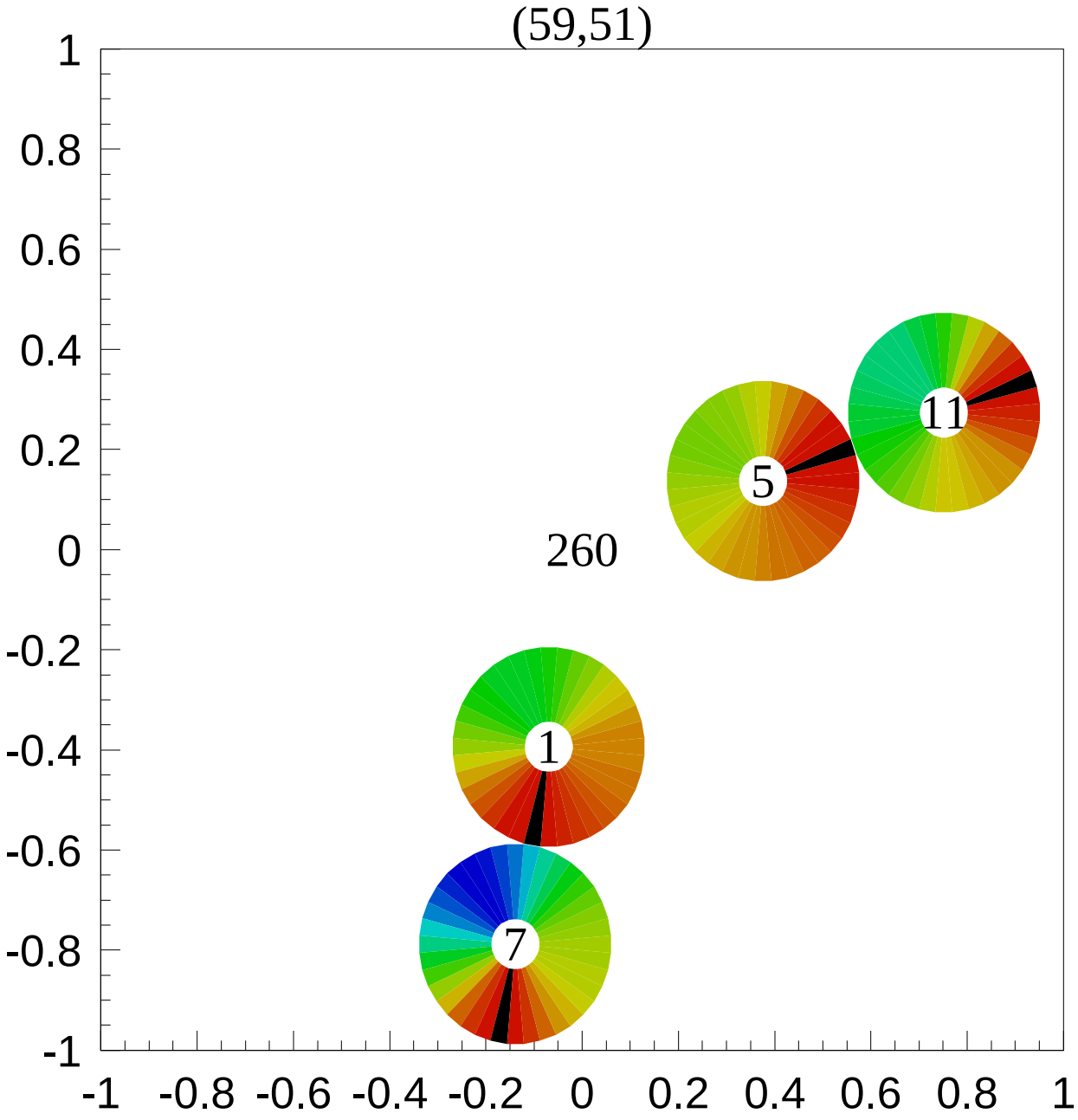

(59,1)
tilted LEDs
average of 6
average of 12
Ilh
1
2
3
4
5
6
7
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

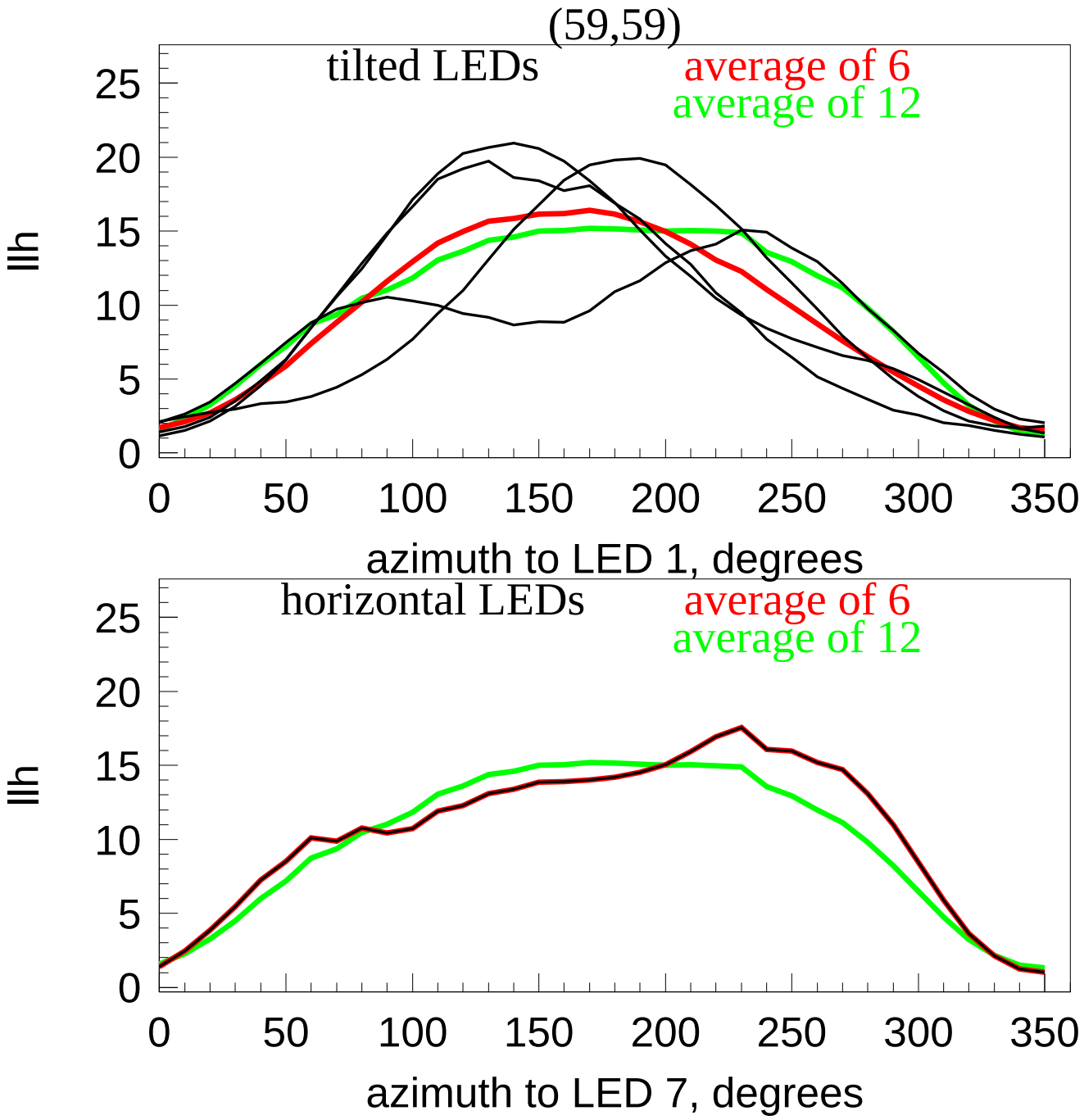

(59,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
11
6
5
7
20
4
10
2
3
8
9

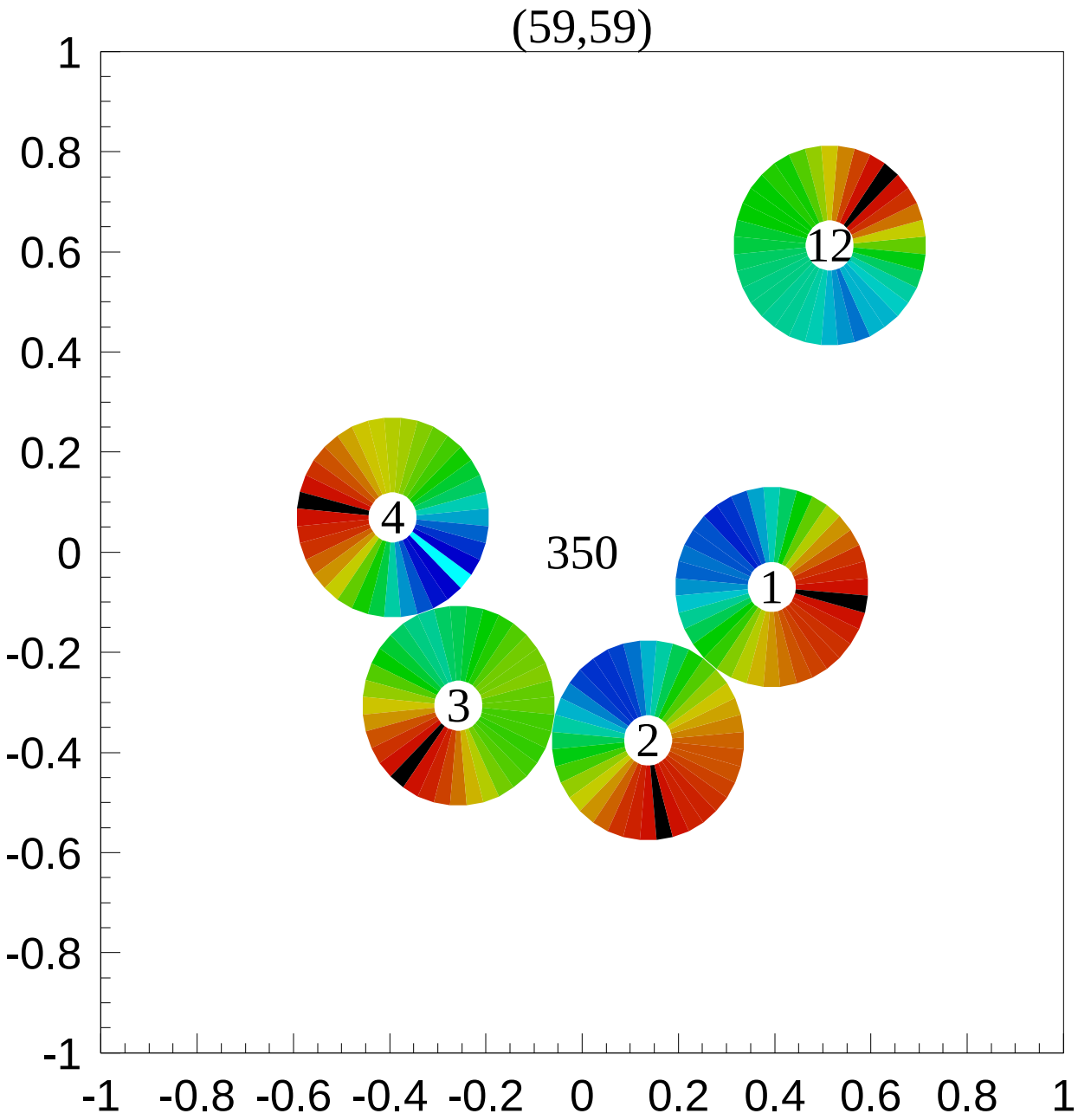

(59,22)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

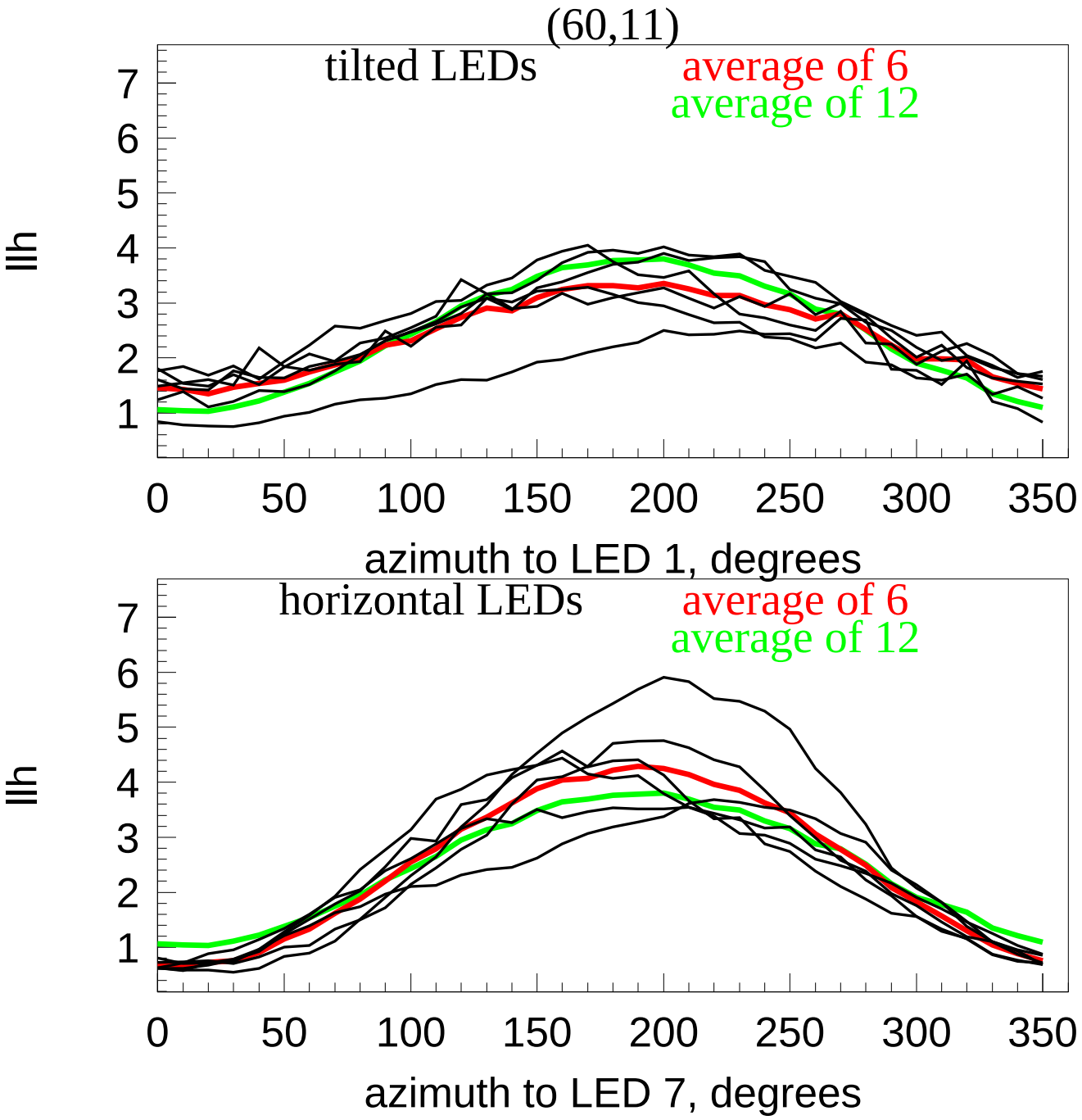

(59,22)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
11
4
5
9
3
290
6
12
2
8
7

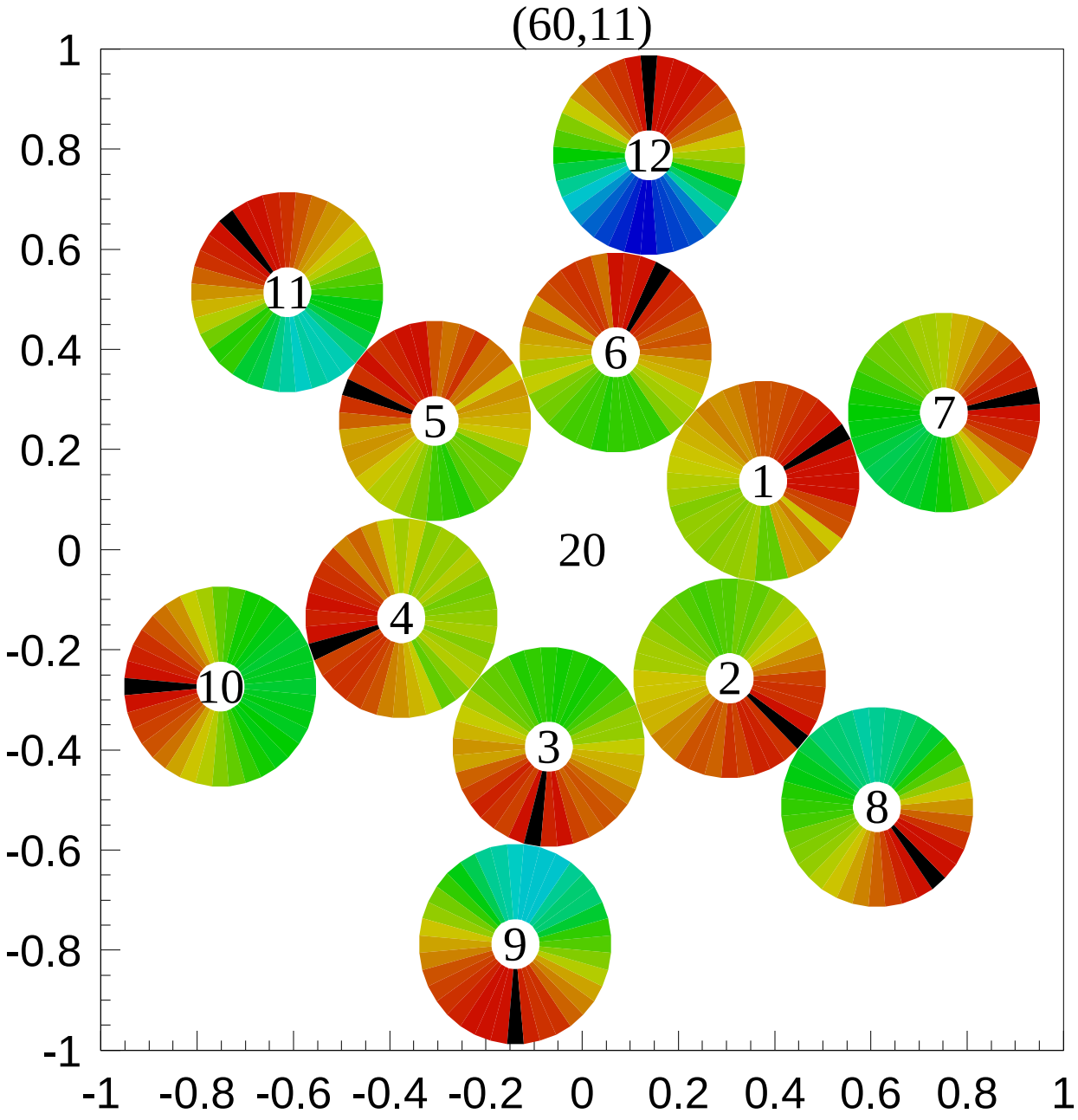

(59,51)
tilted LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

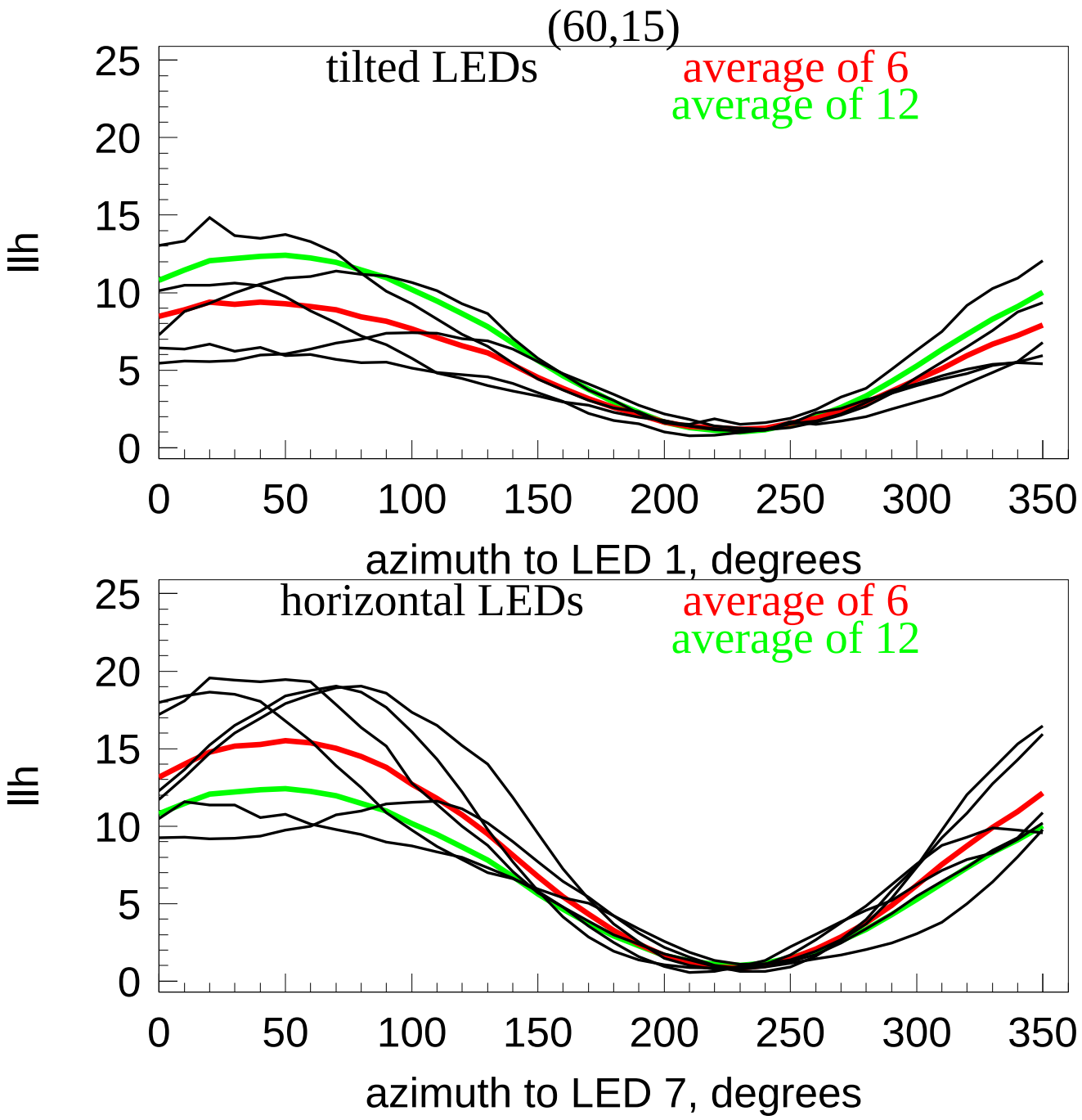

(59,51)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
260
1
7

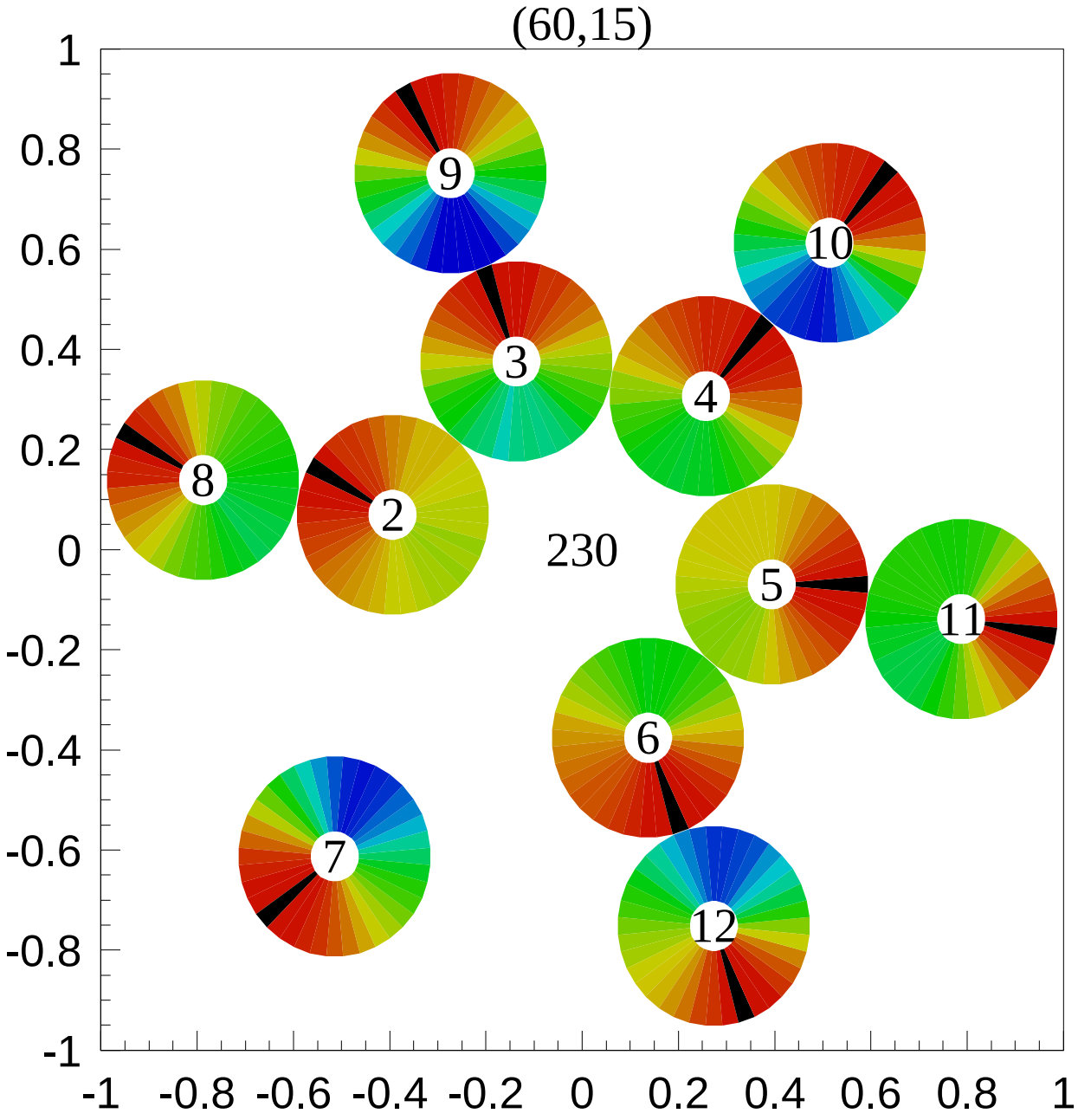

(59,59)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

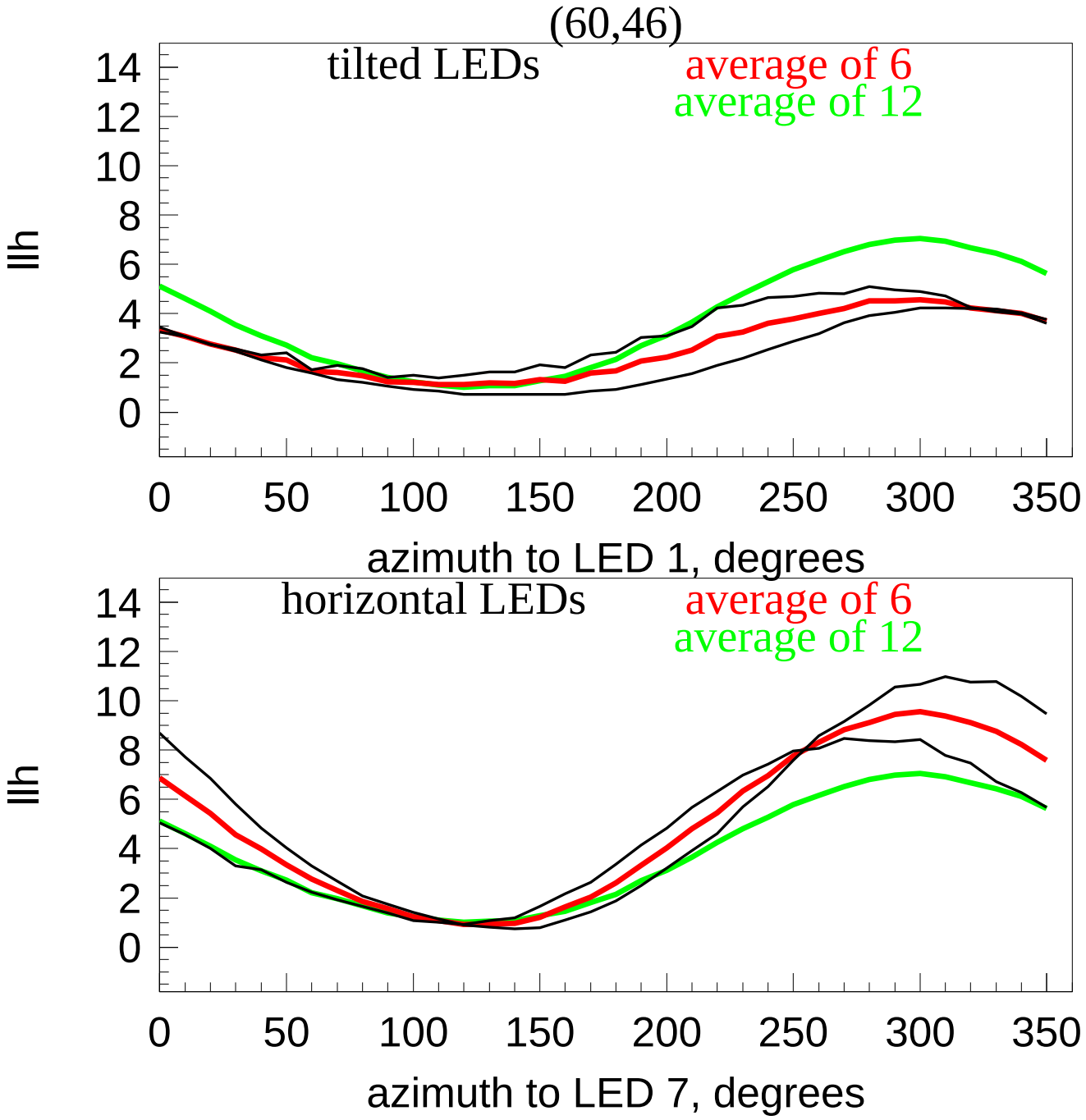

(59,59)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
4
350
1
3
2

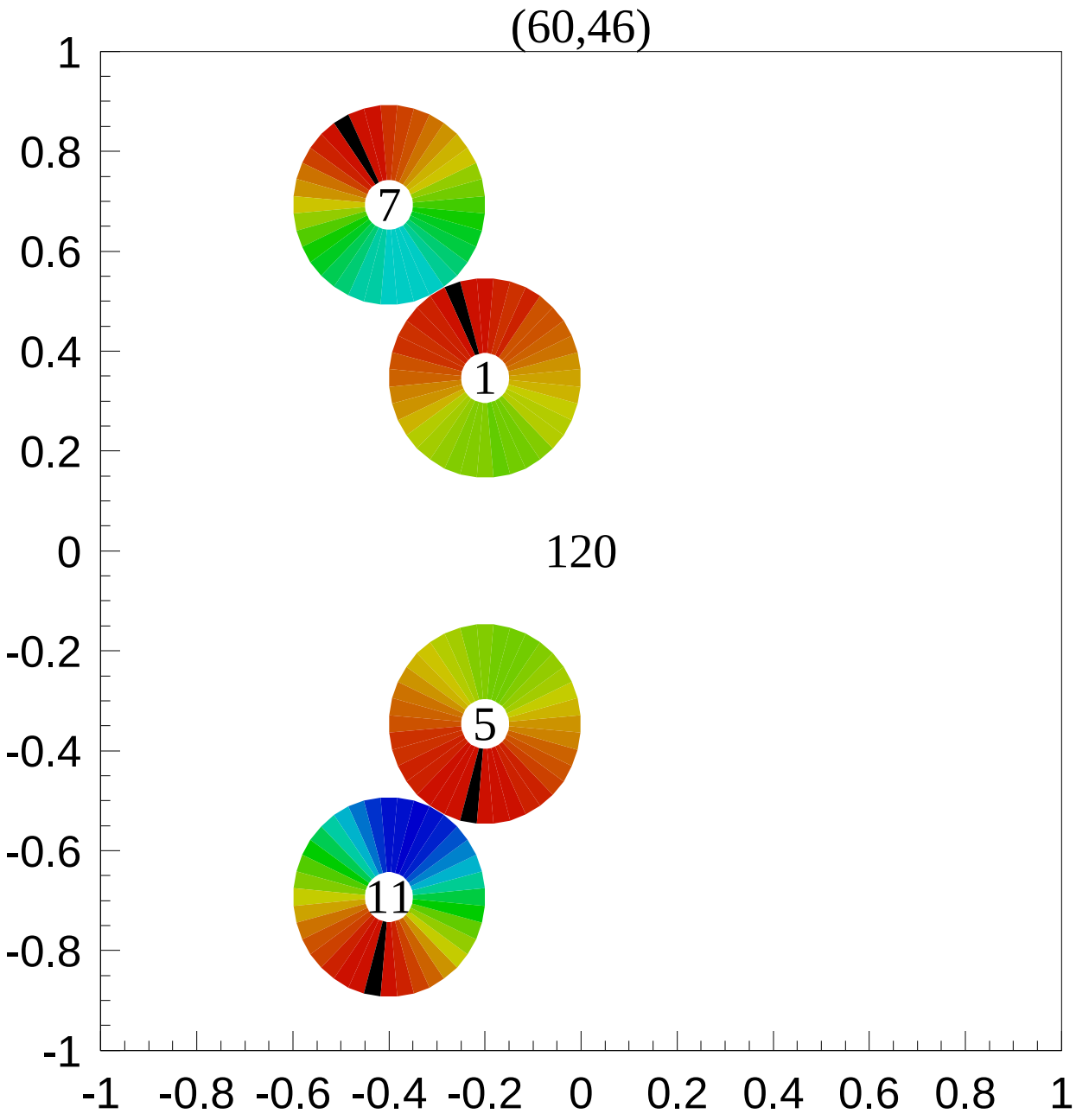

(60,11)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

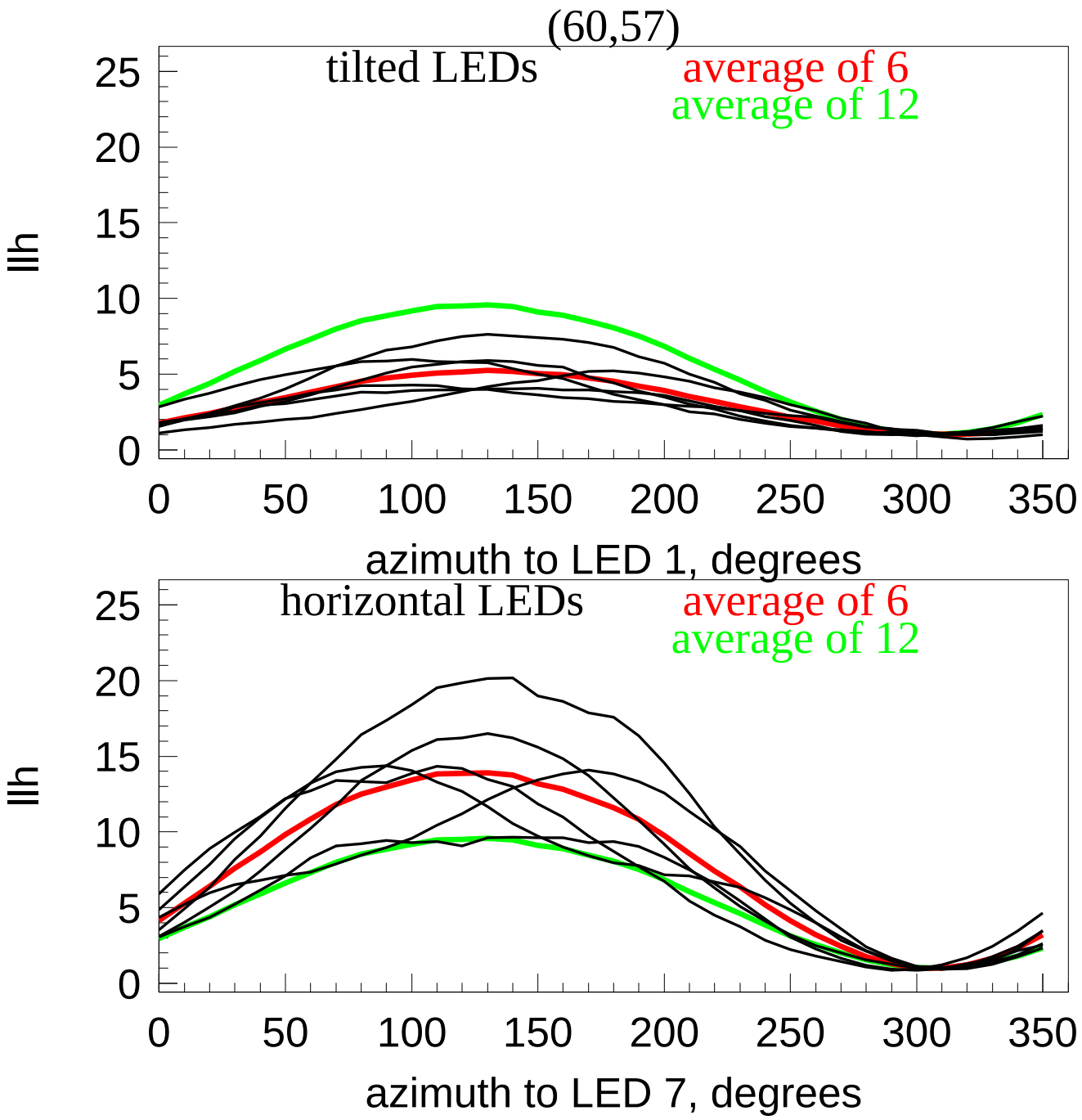

(60,11)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
11
6
5
7
1
20
4
10
2
3
8
9

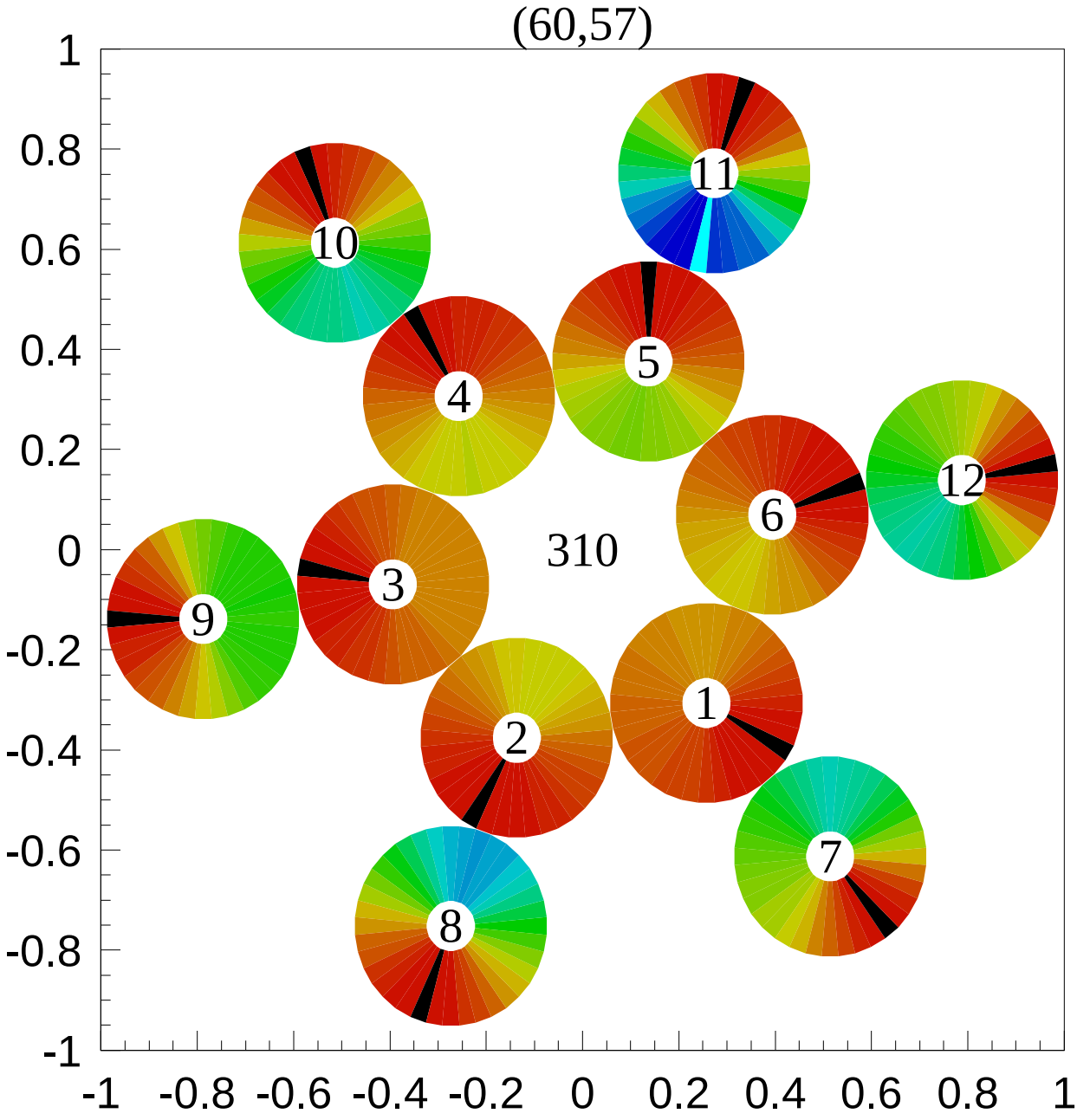

(60,15)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

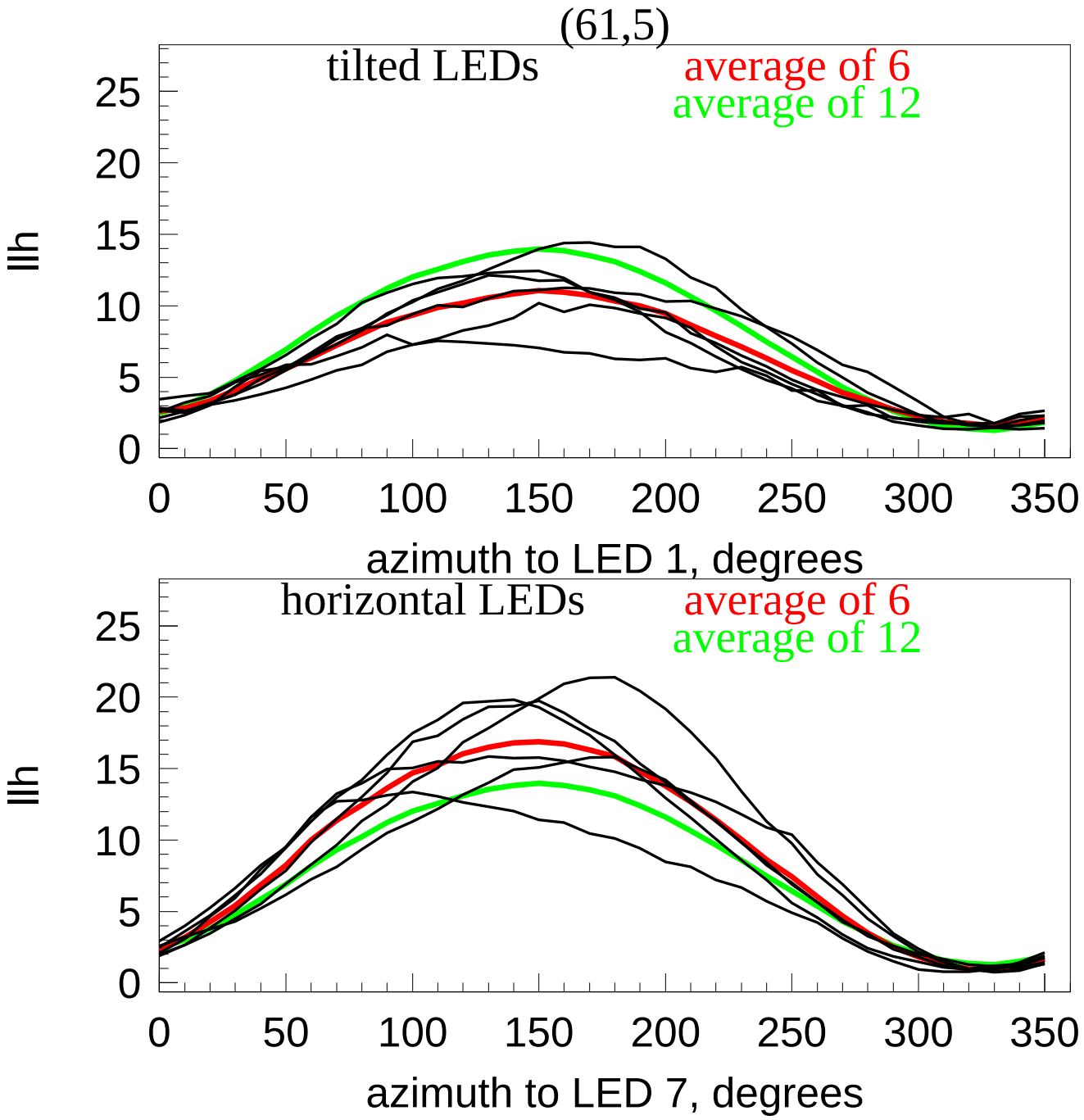

(60,15)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
10
3
4
8
2
230
5
11
6
7
12

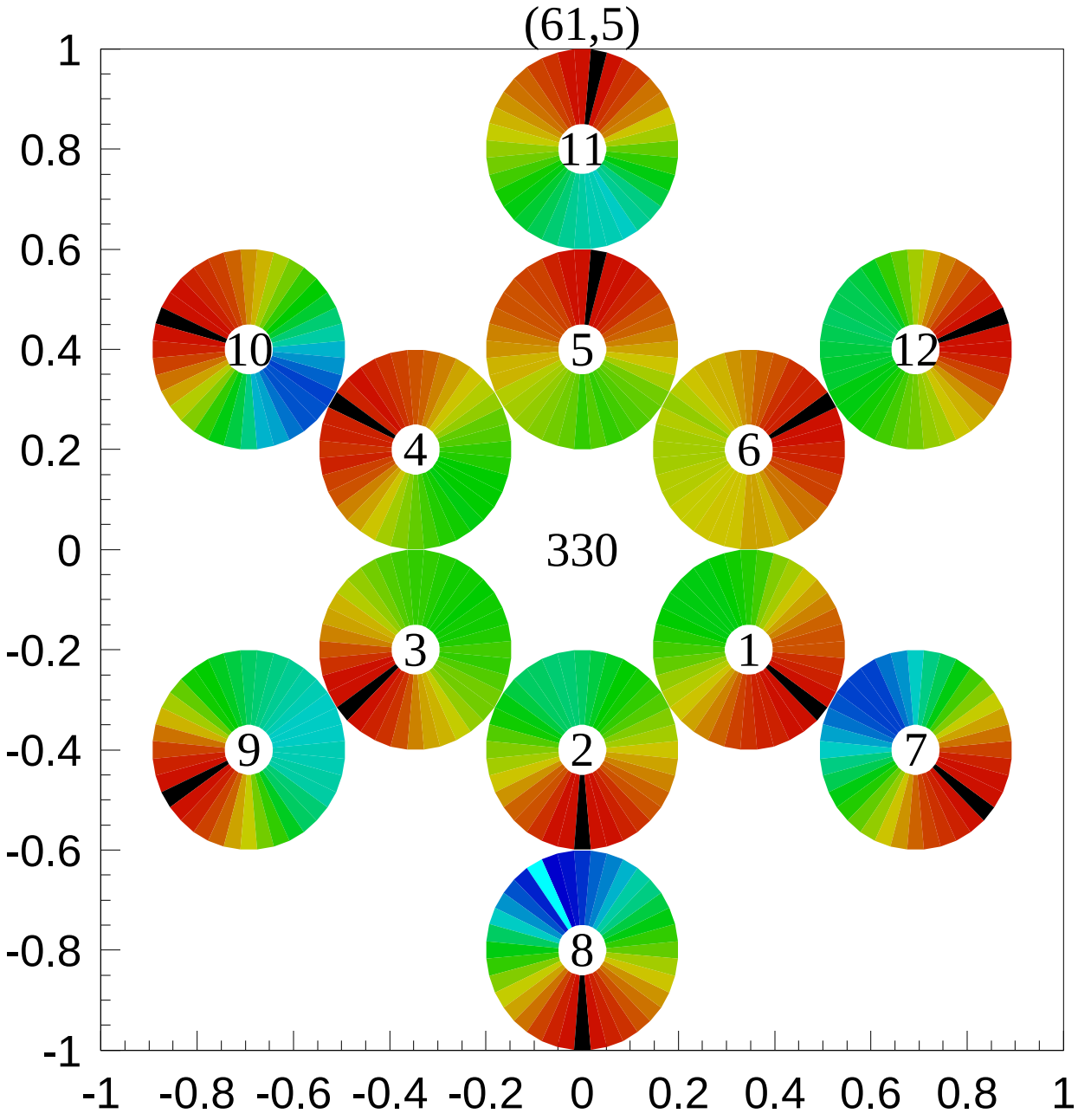

(60,46)
tilted LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

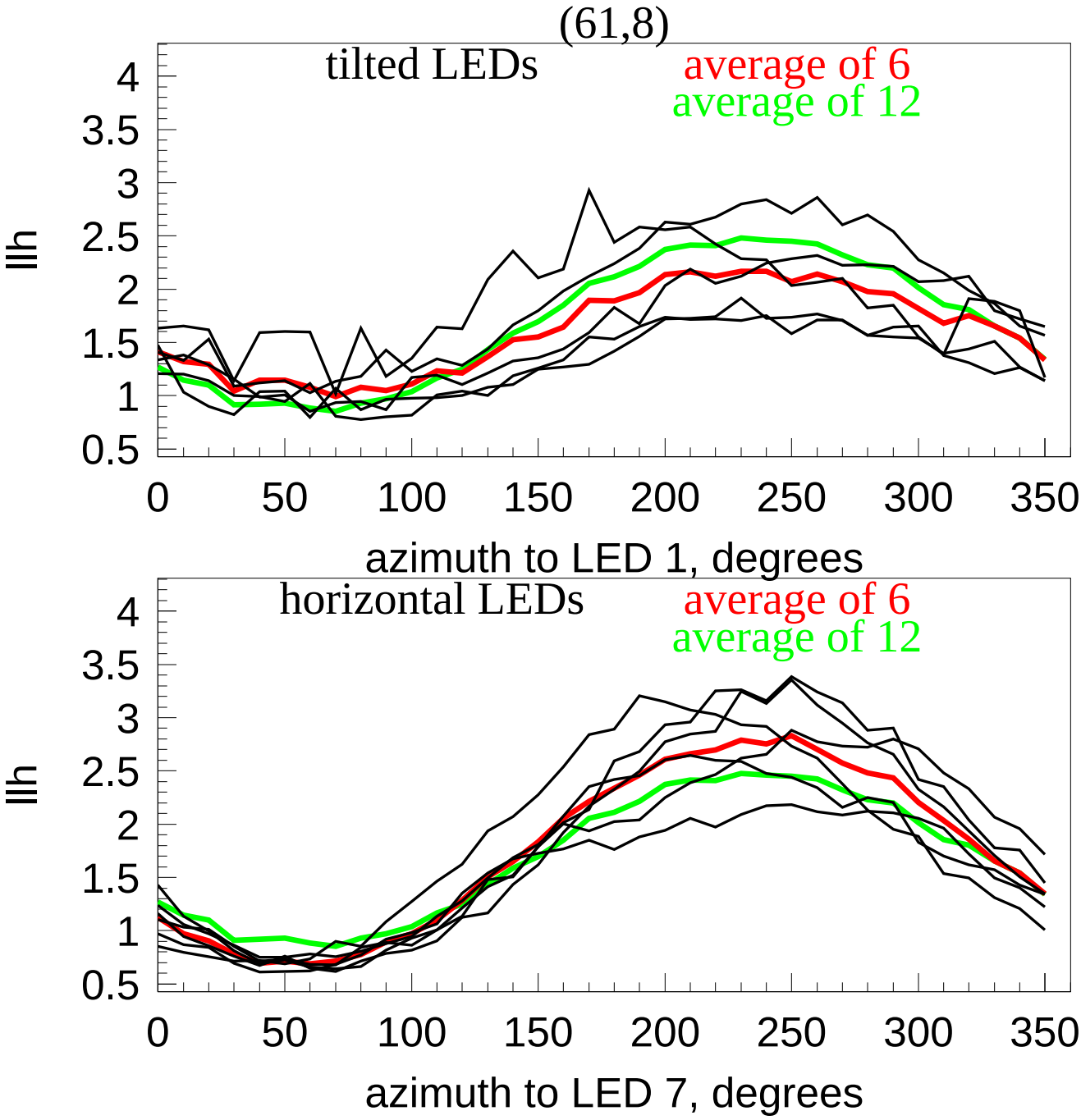

(60,46)
7
1
120
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

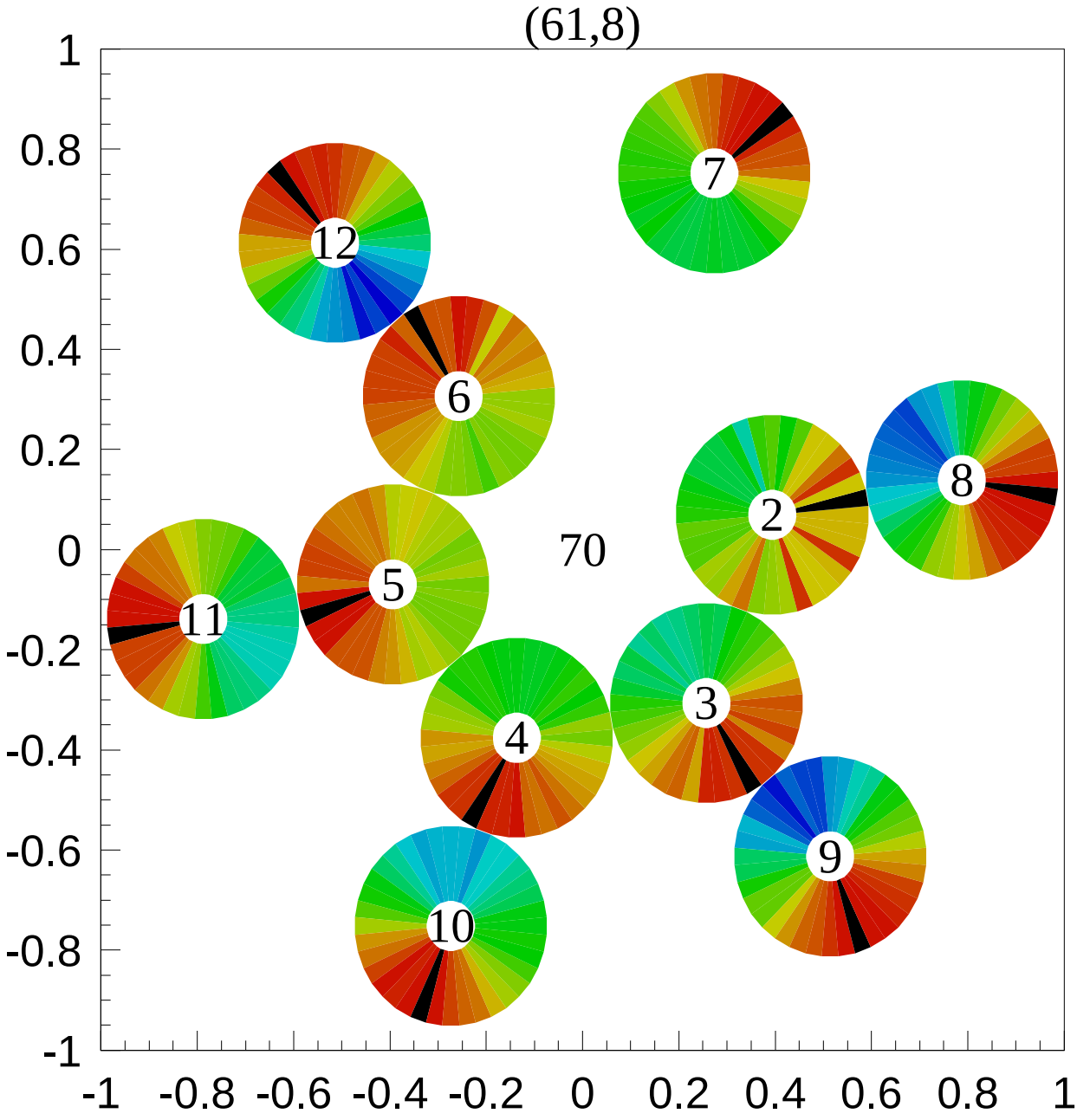

(60,57)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

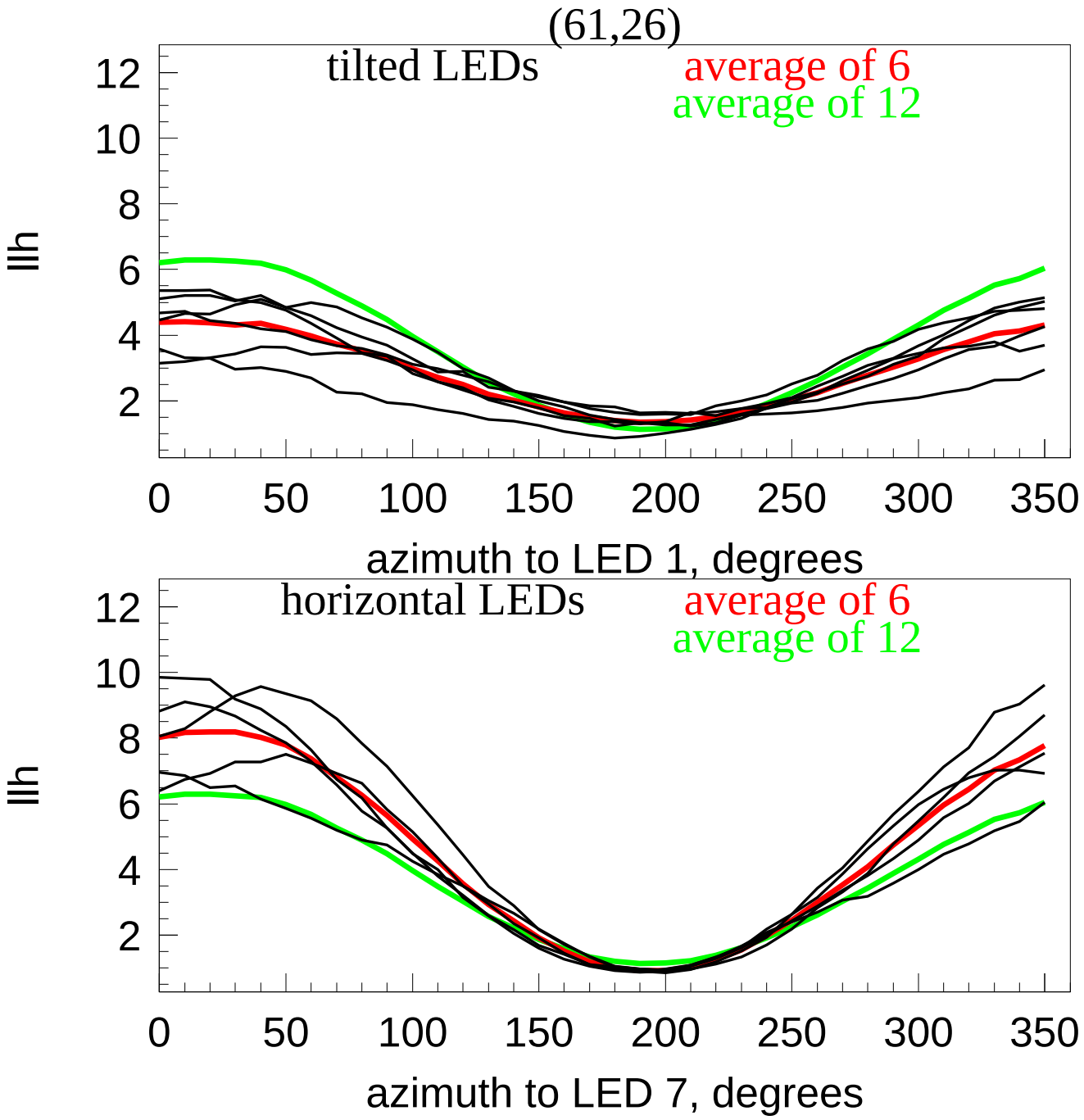

(60,57)
310
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

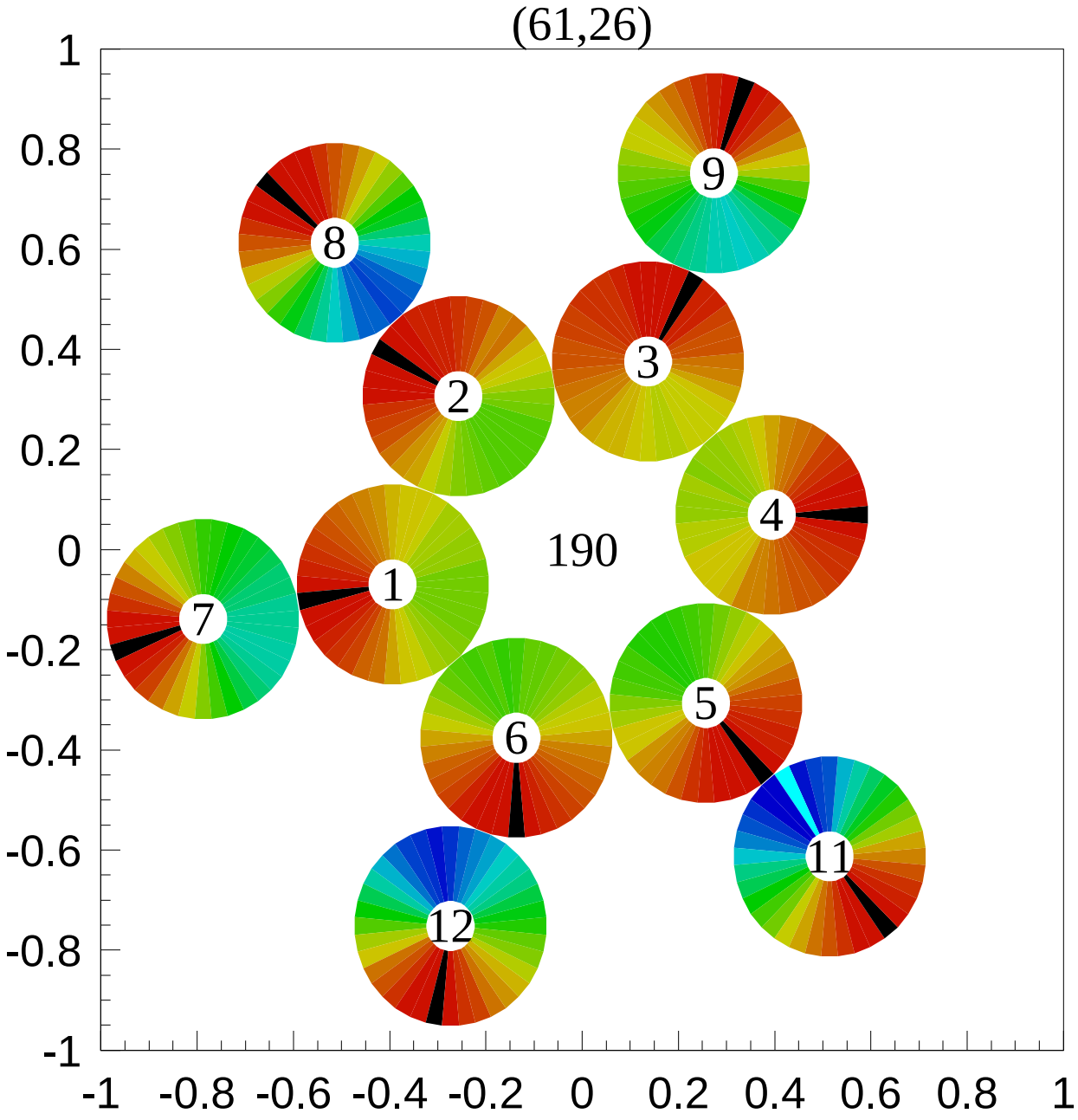

(61,5)
tilted LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

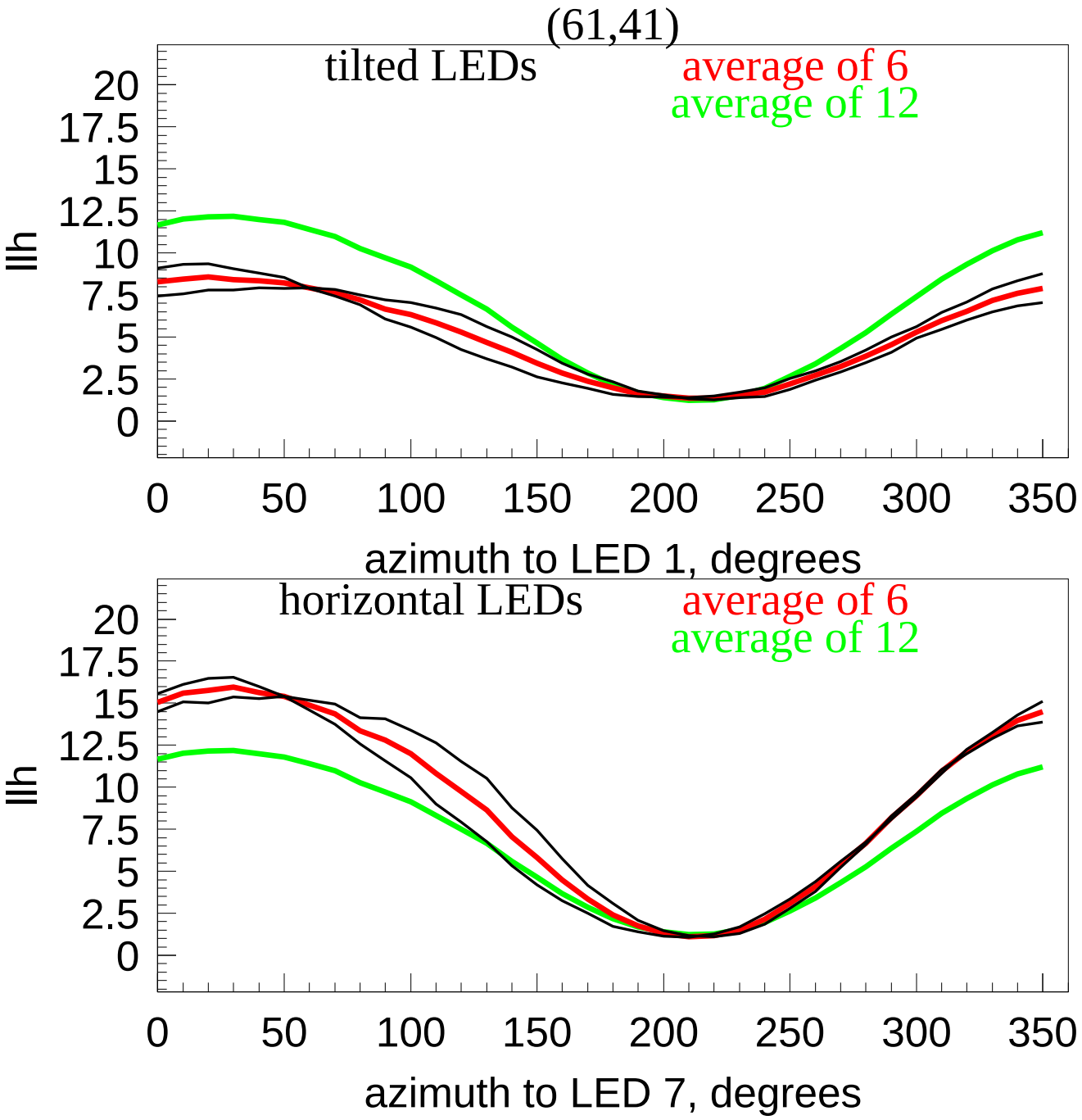

(61,5)
11
10
5
12
4
6
330
3
1
9
2
7
8
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

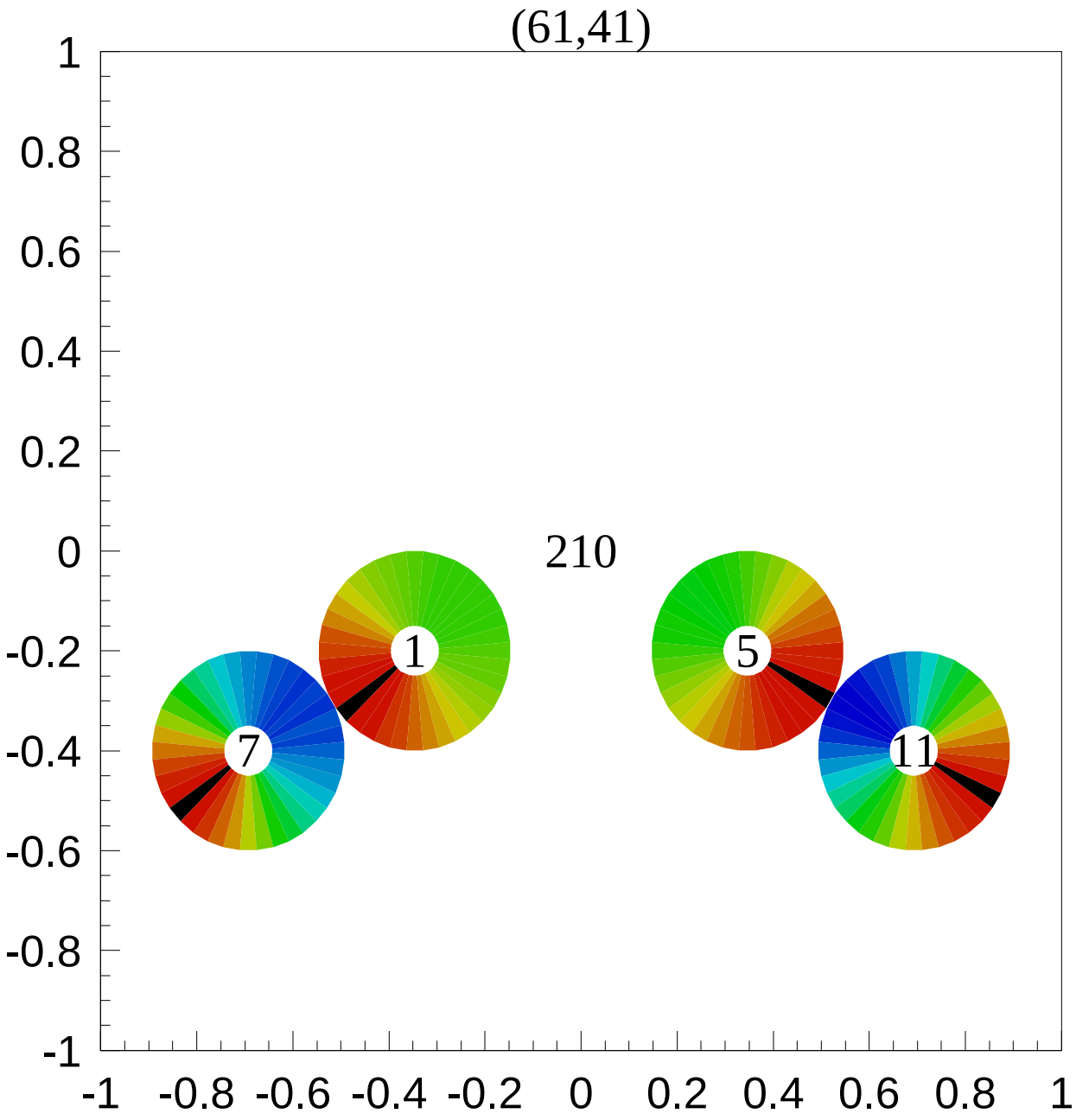

(61,8)
tilted LEDs
average of 6
average of 12
Ilh
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

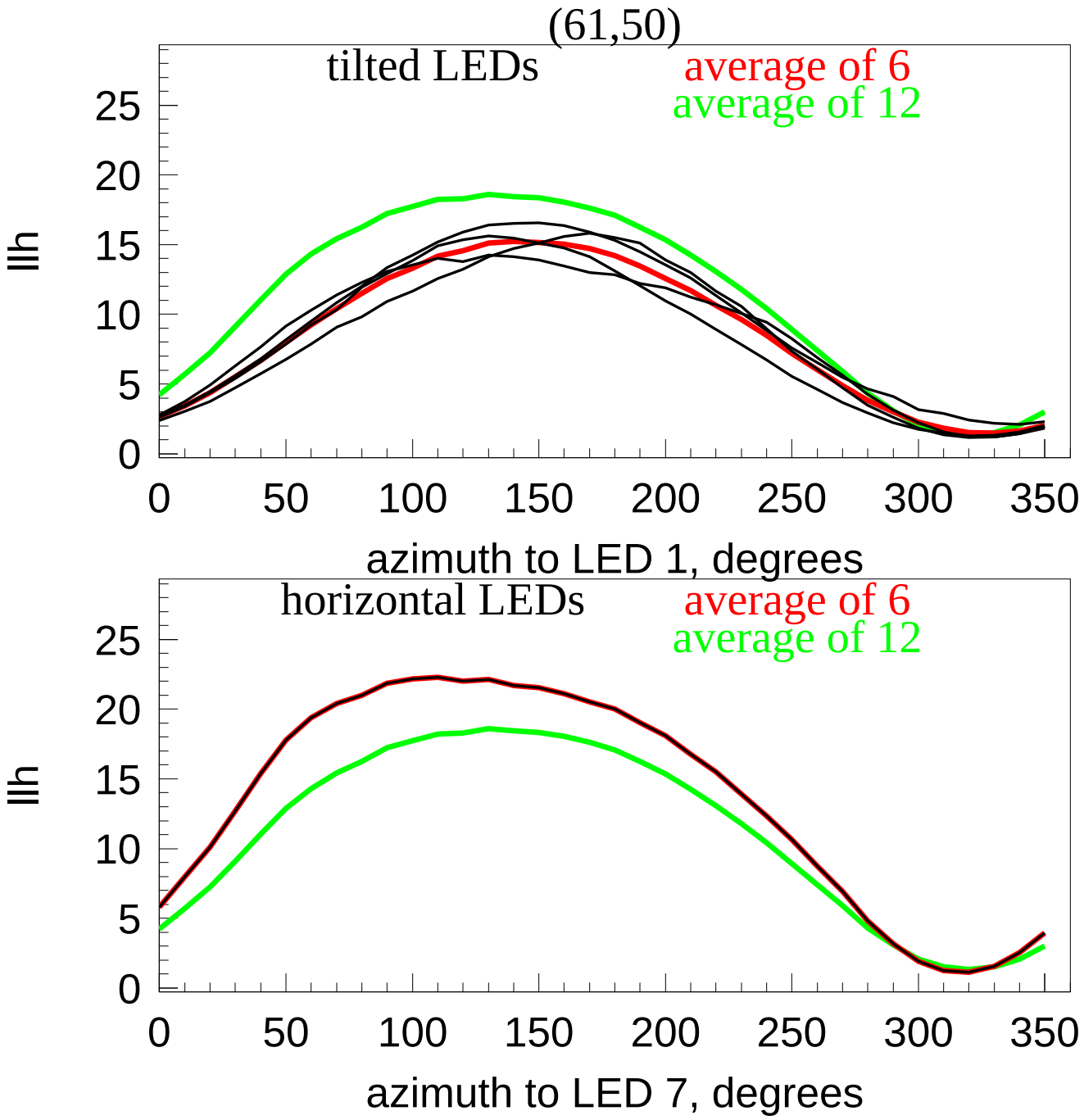

(61,8)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
12
6
8
2
70
5
11
3
4
9
10

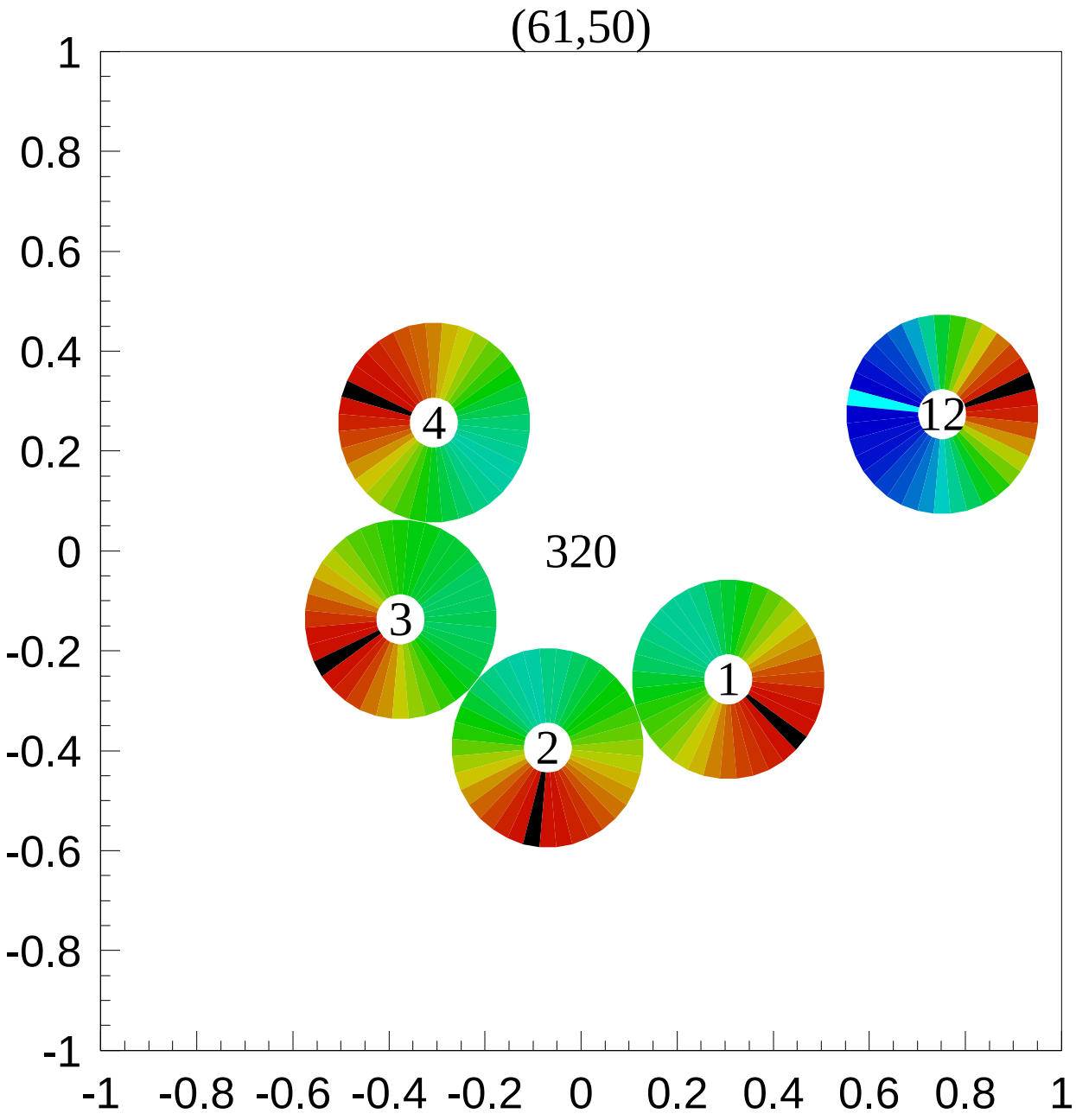

(61,26)
tilted LEDs
average of 6
average of 12
llh
12
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
12
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

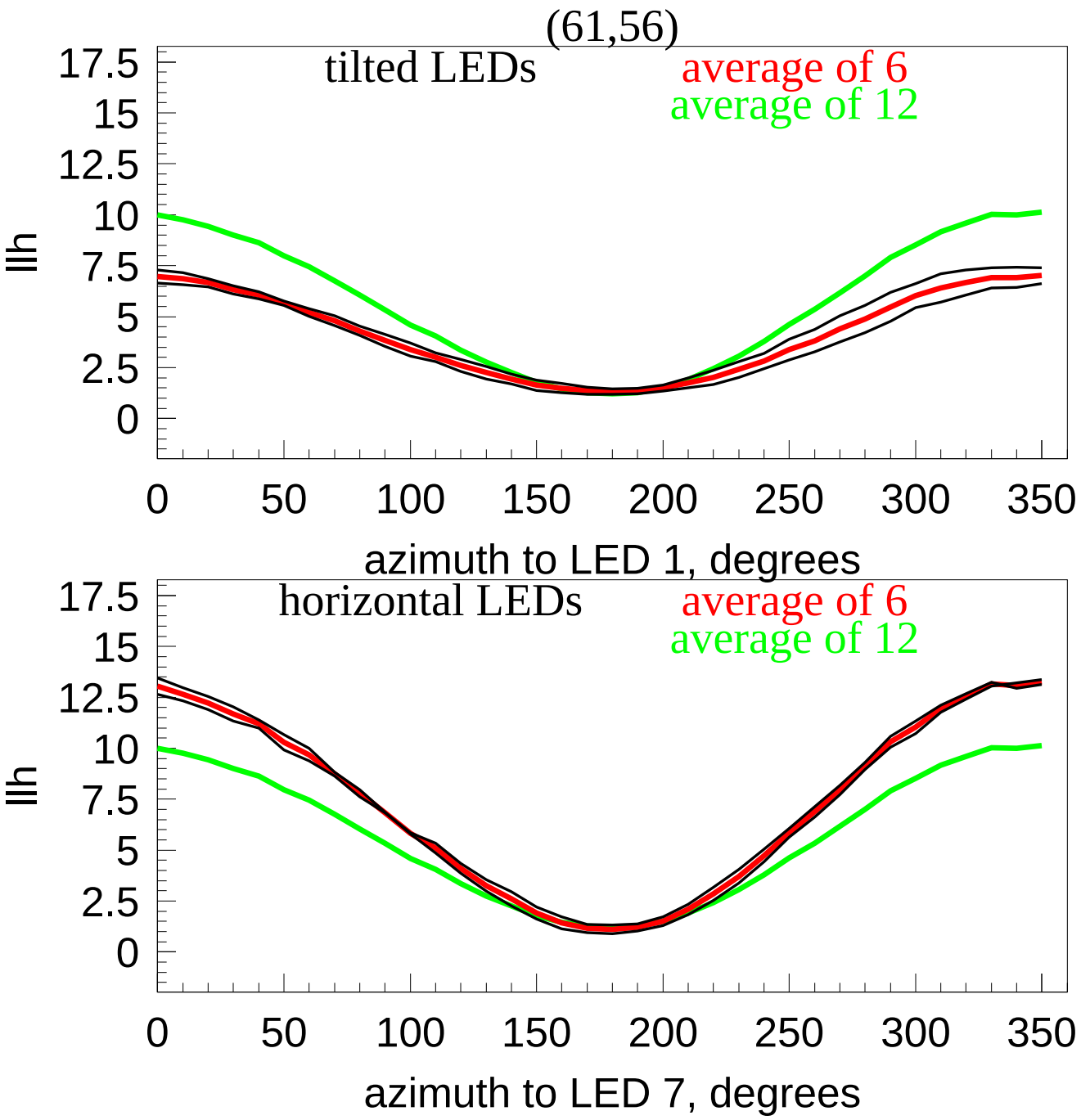

(61,26)
190
1
2
3
4
5
6
7
8
9
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

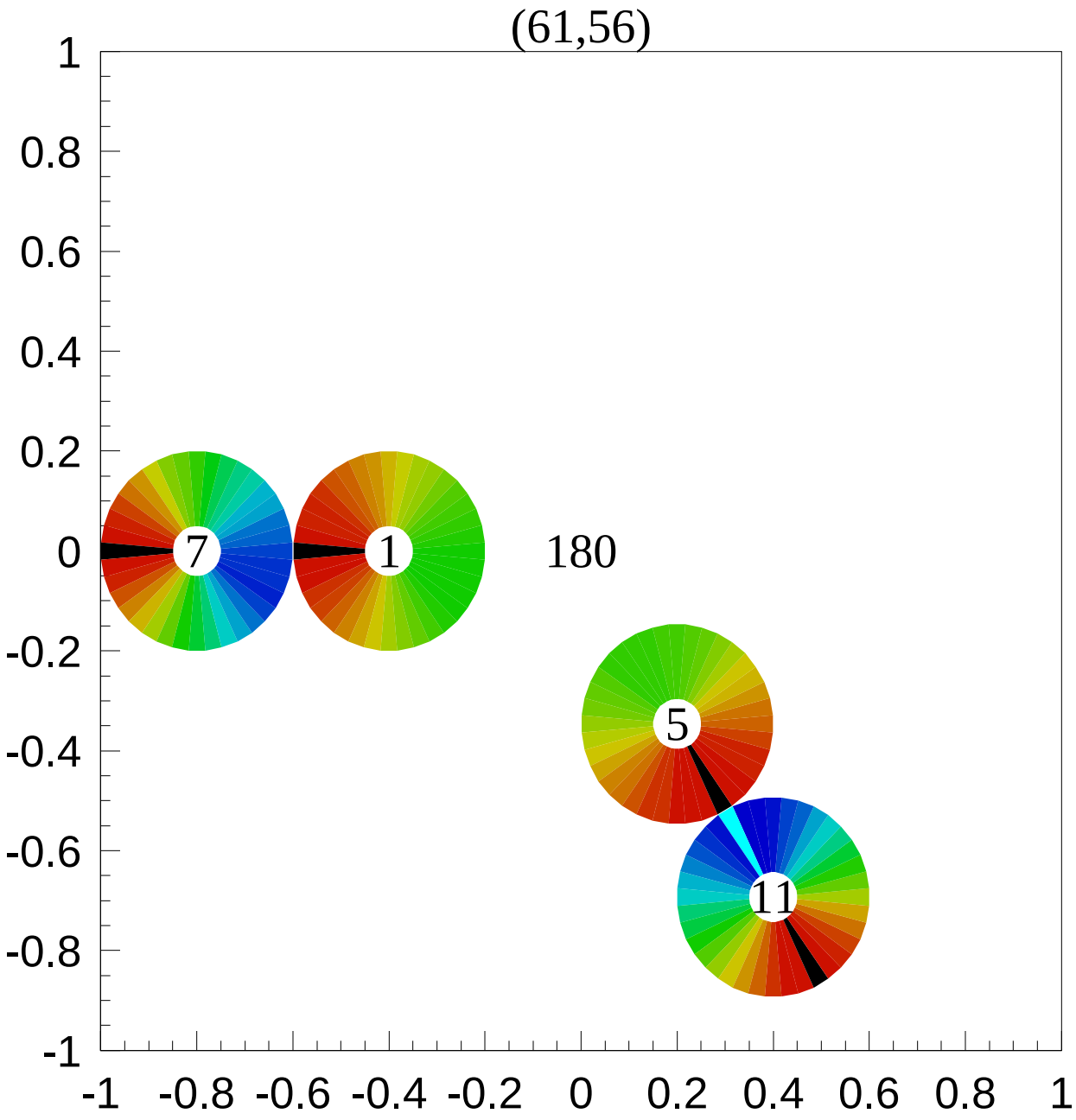

(61,41)
tilted LEDs
average of 6
average of 12
20
17.5
15
12.5
10
7.5
5
2.5
0
Ilh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
20
17.5
15
12.5
10
7.5
5
2.5
0
Ilh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

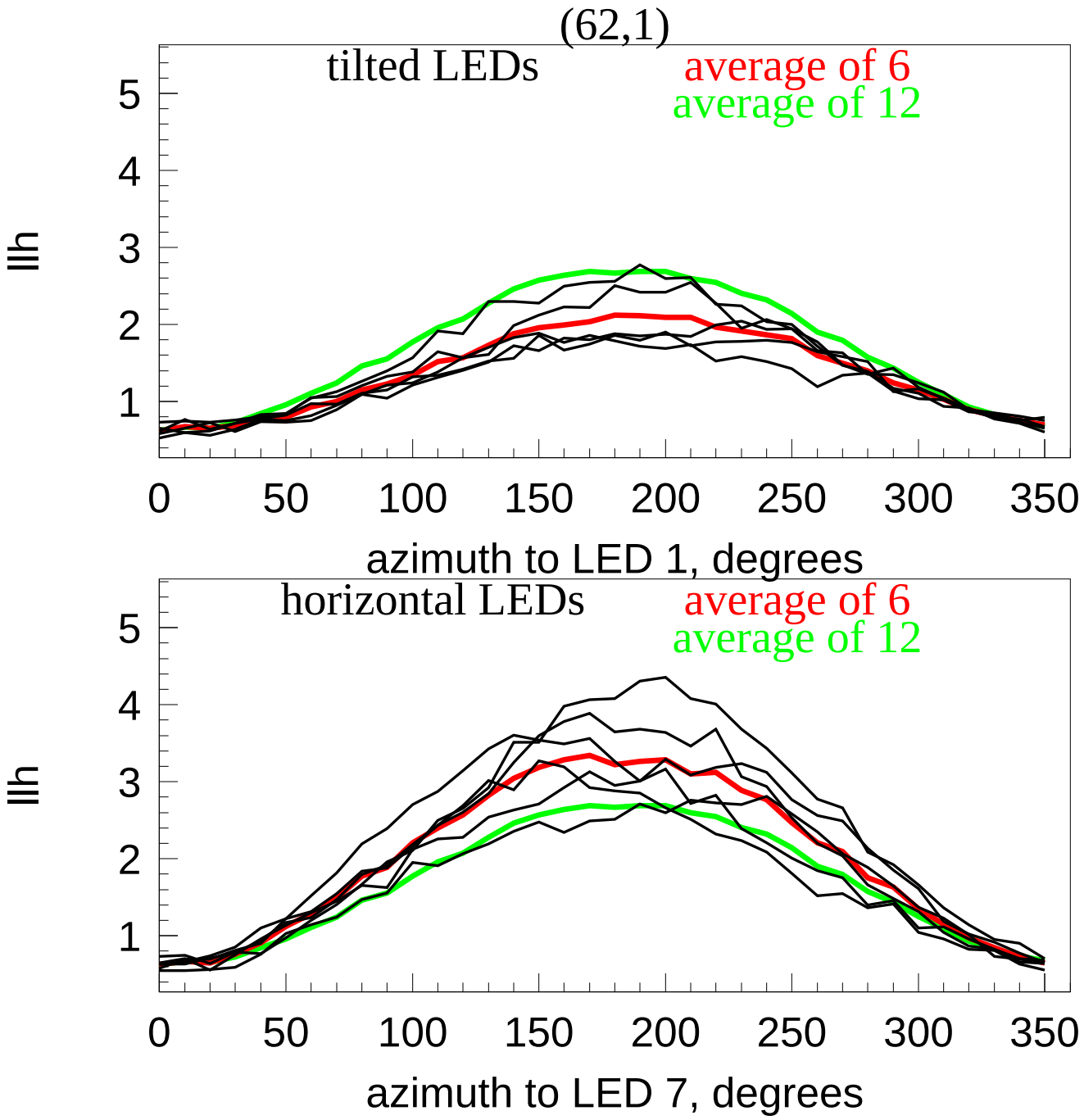

(61,41)
210
1
5
7
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

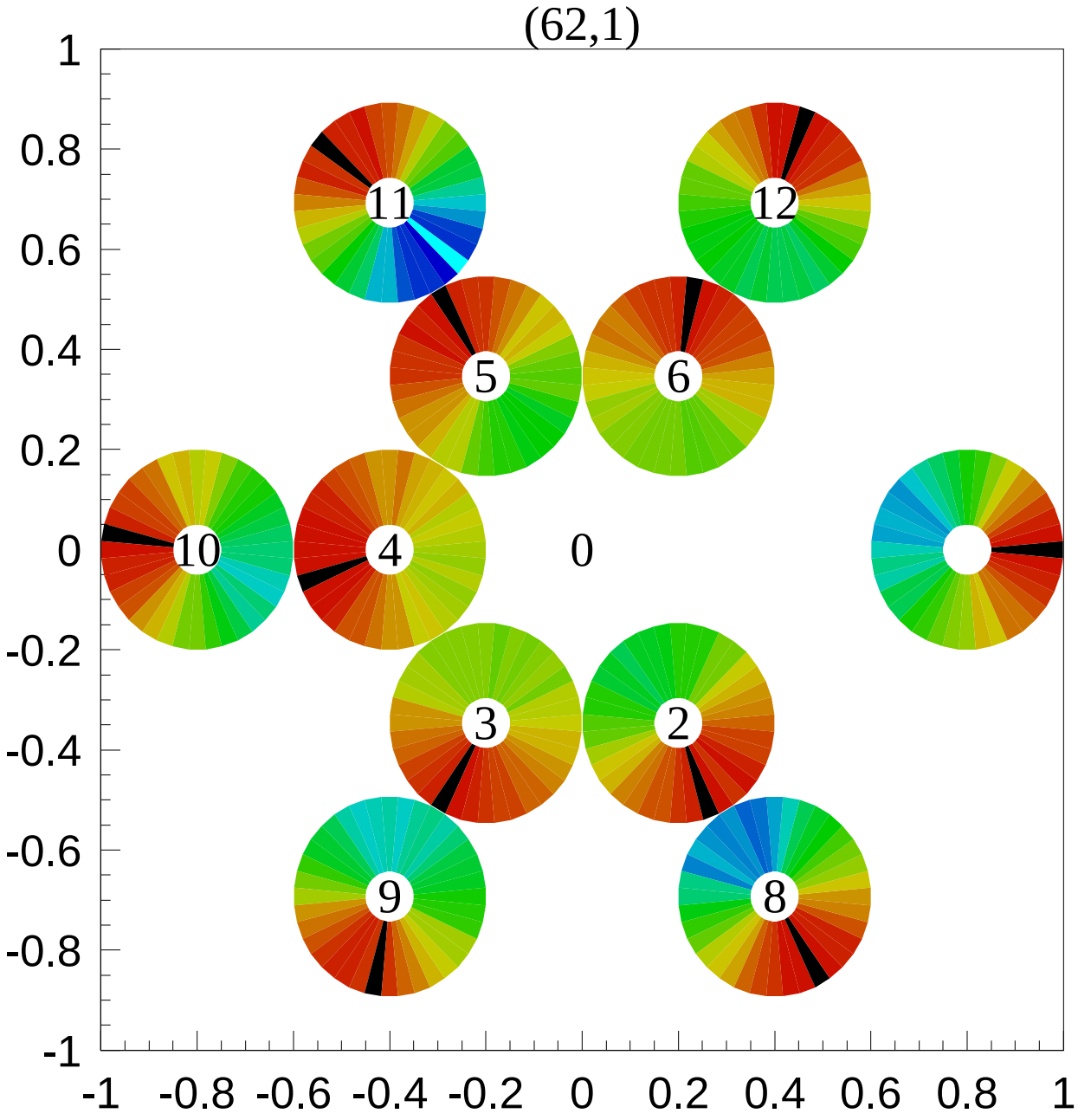

(61,50)
tilted LEDs
average of 6
average of 12
llh
0
5
10
15
20
25
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
0
5
10
15
20
25
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

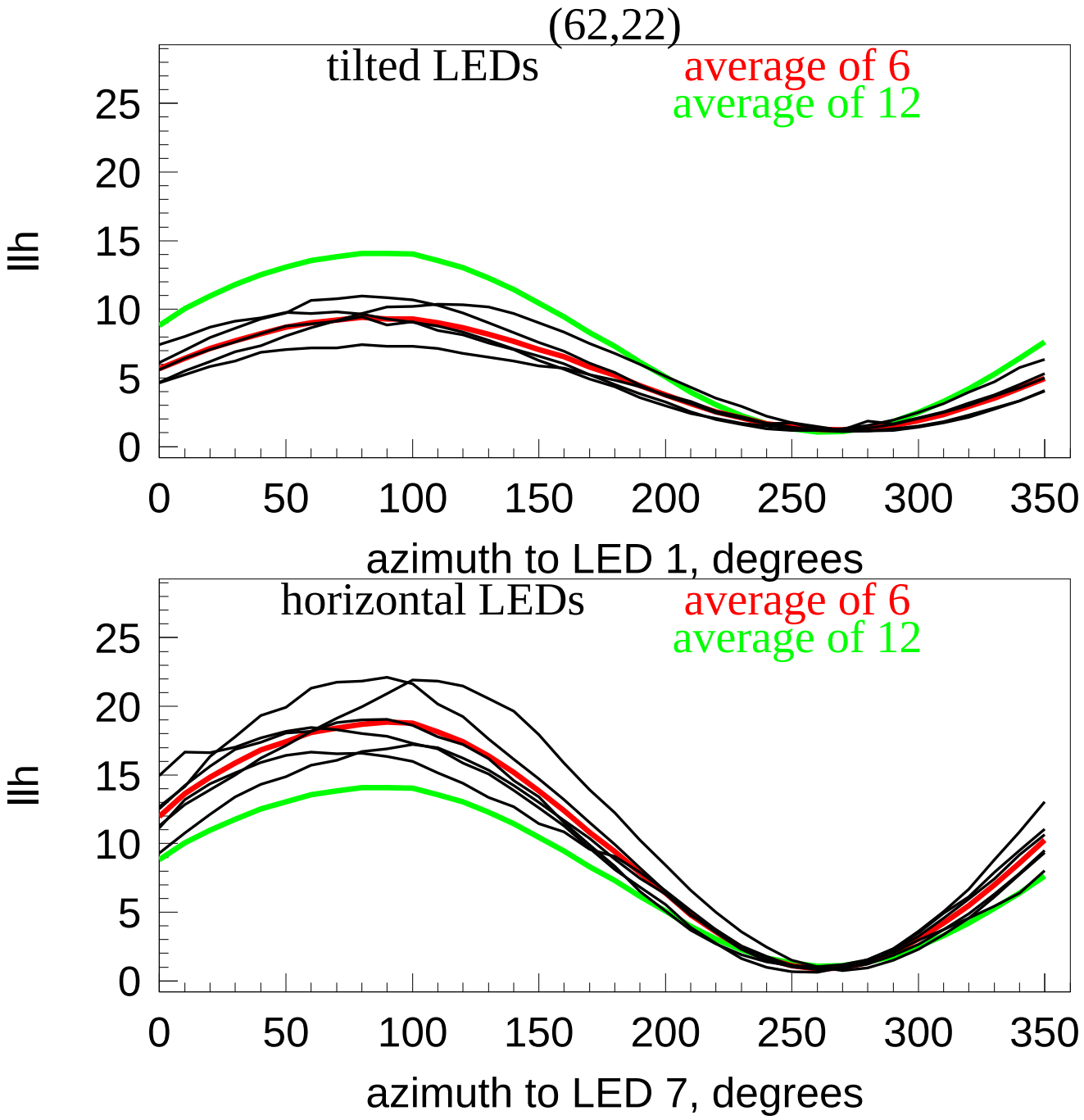

(61,50)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
4
12
320
3
1
2

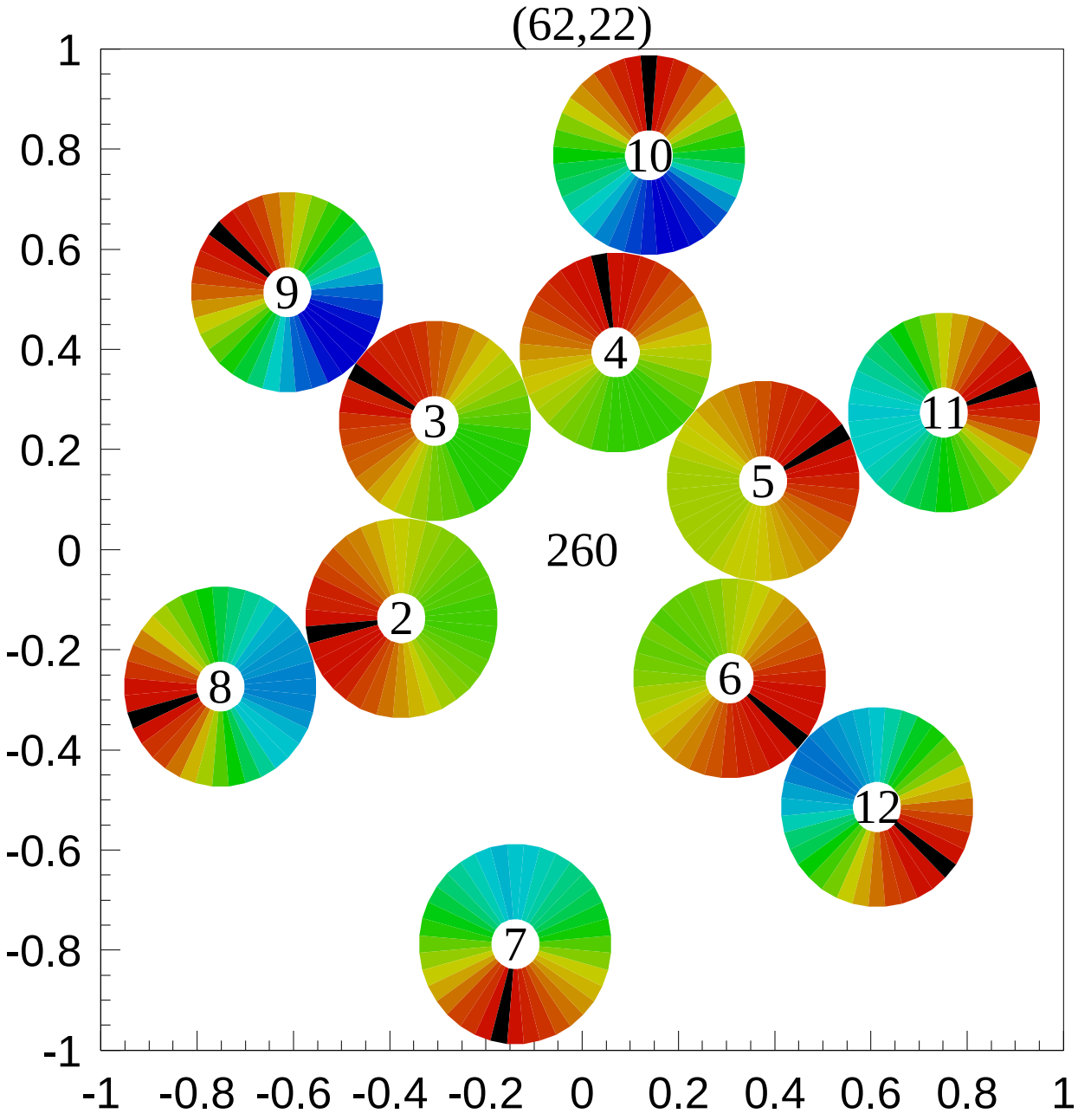

(61,56)
tilted LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

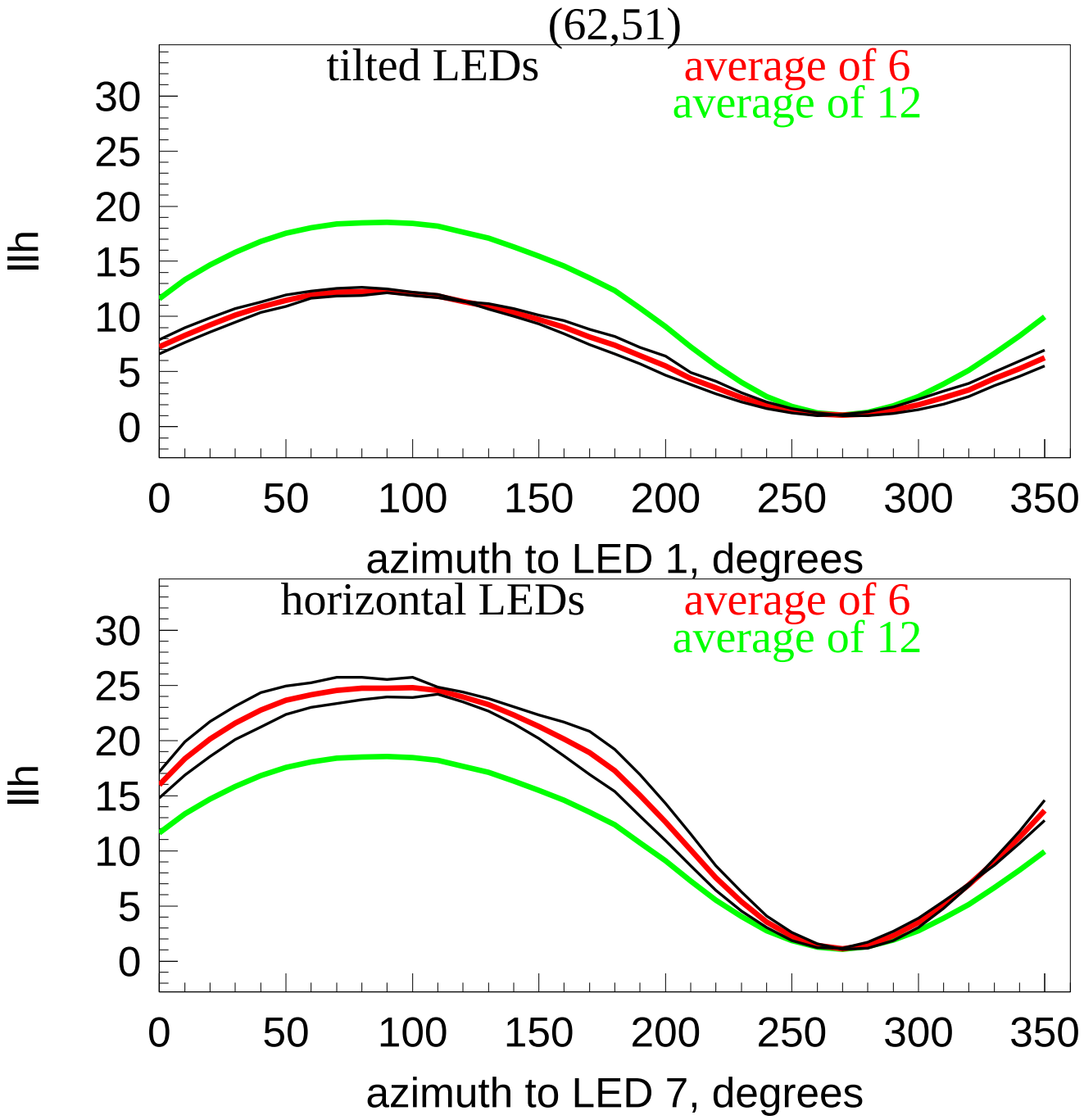

(61,56)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
1
180
5
11

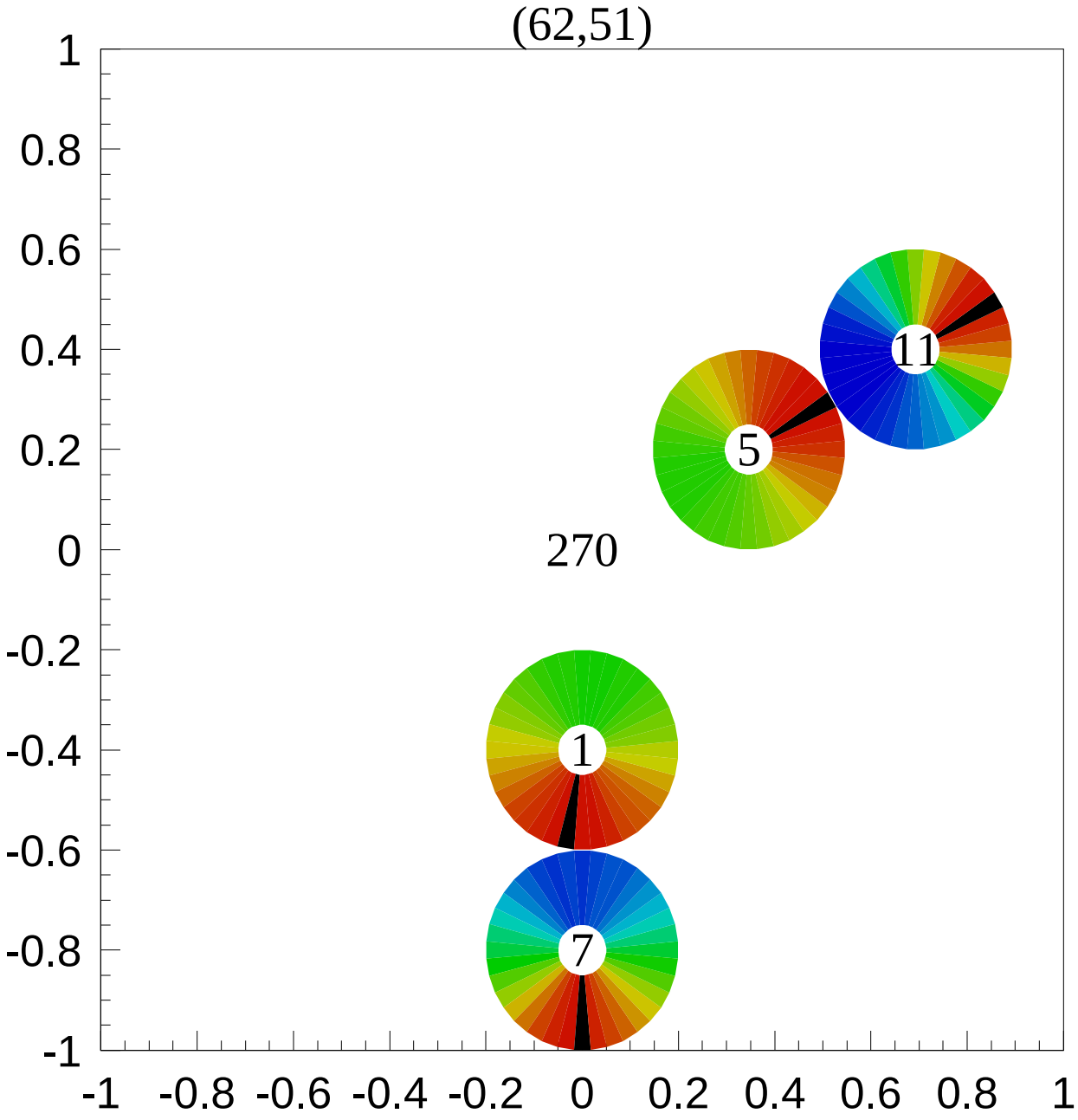

(62,1)
tilted LEDs
average of 6
average of 12
Ilh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

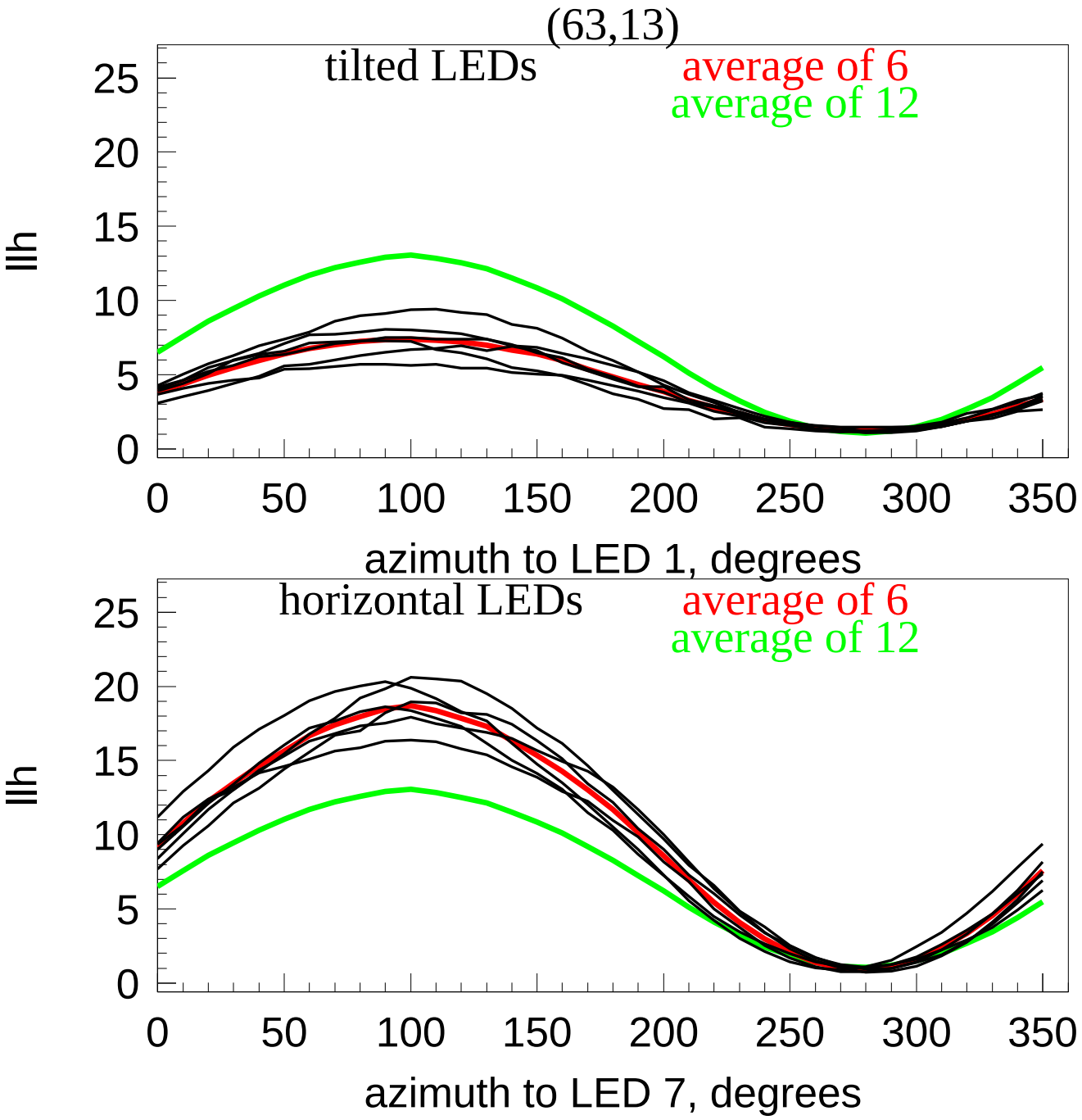

(62,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
12
5
6
10
4
0
3
2
9
8

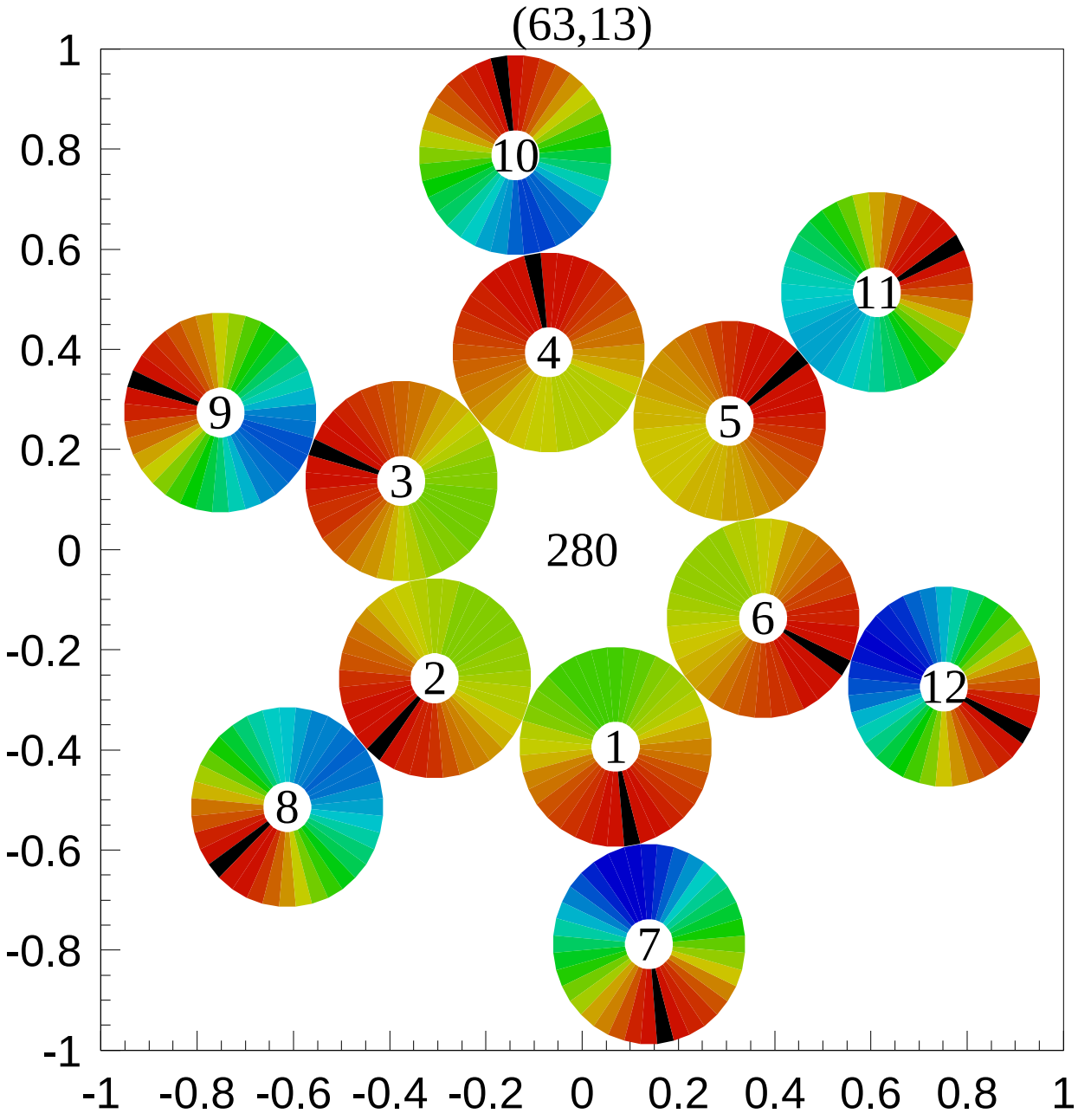

(62,22)
tilted LEDs
average of 6
average of 12
llh
0
5
10
15
20
25
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
0
5
10
15
20
25
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

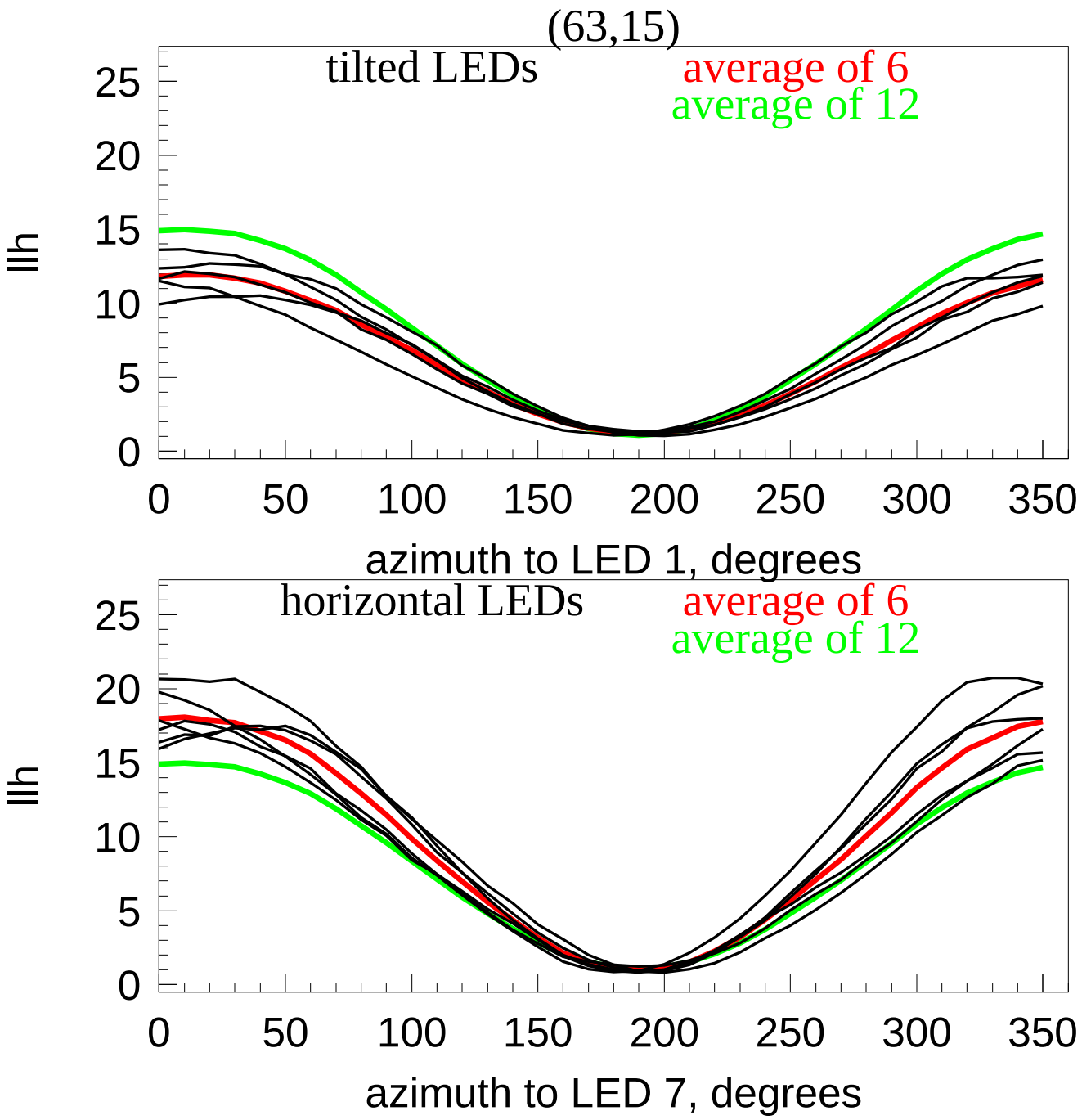

(62,22)
10
9
4
3
11
5
260
2
8
6
12
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1 -0.8 -0.6 -0.4 -0.2 0 0.2 0.4 0.6 0.8 1

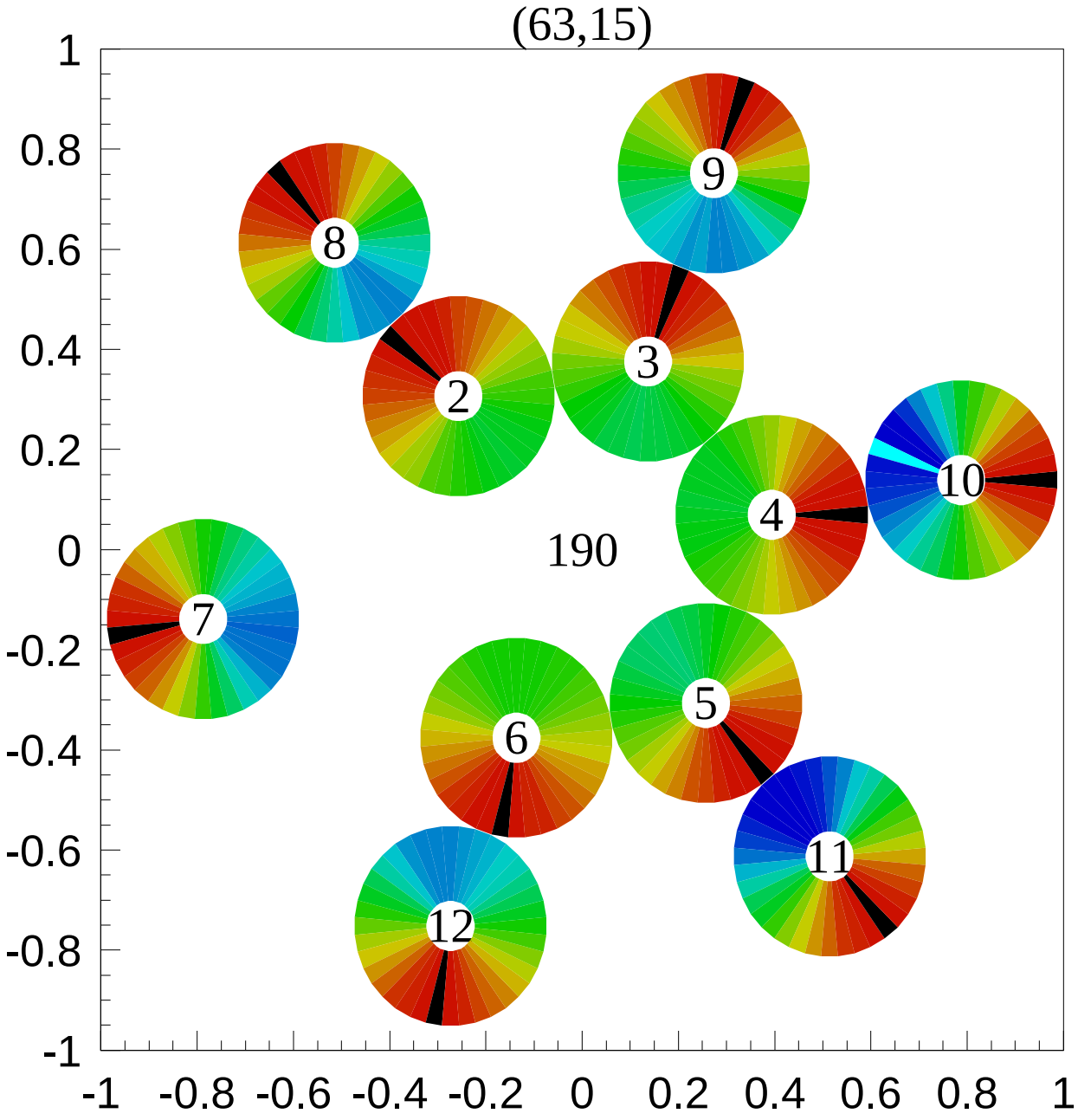

(62,51)
tilted LEDs
average of 6
average of 12
30
25
20
15
10
5
0
Ilh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
30
25
20
15
10
5
0
Ilh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

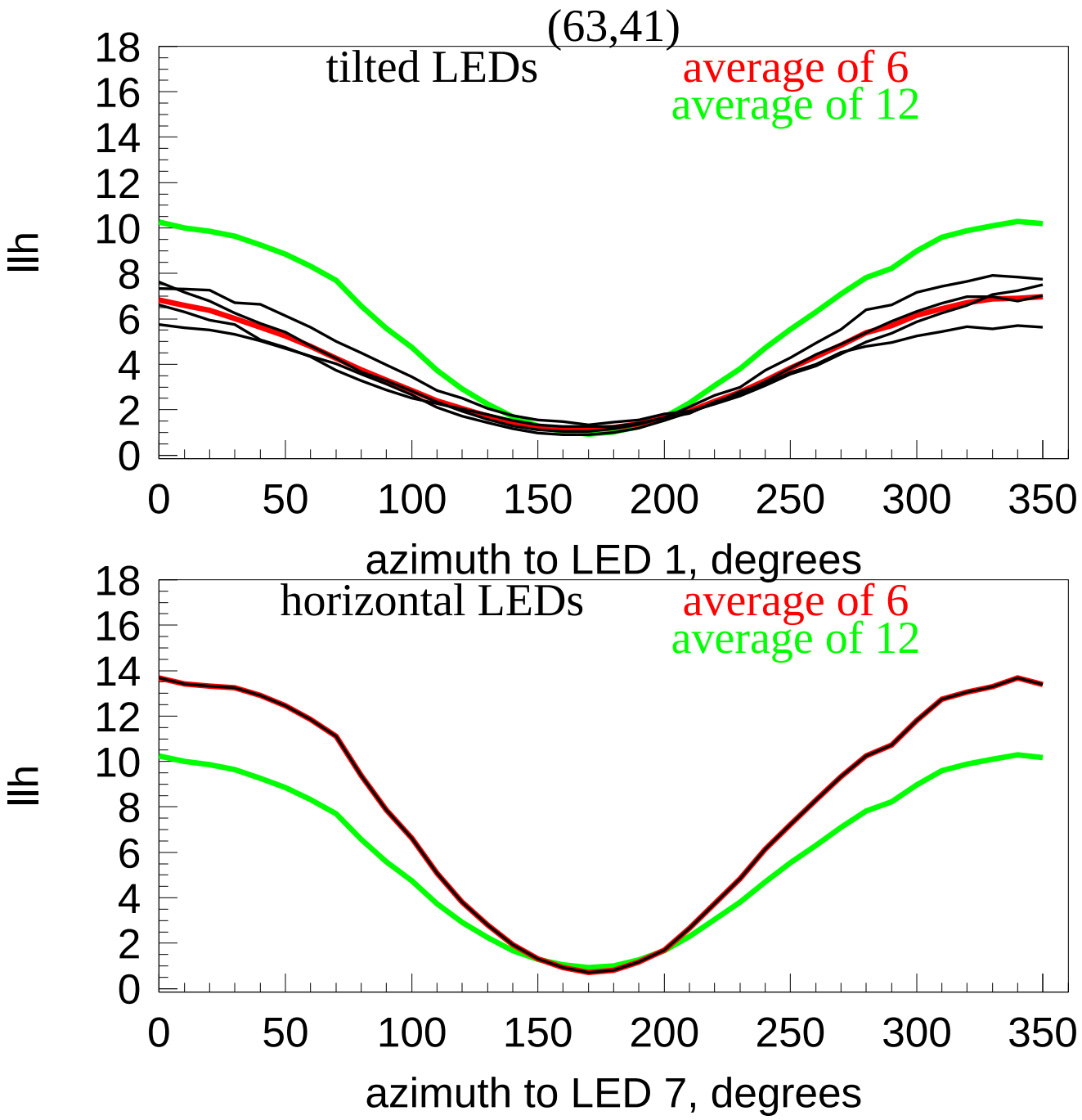

(62,51)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
270
1
7

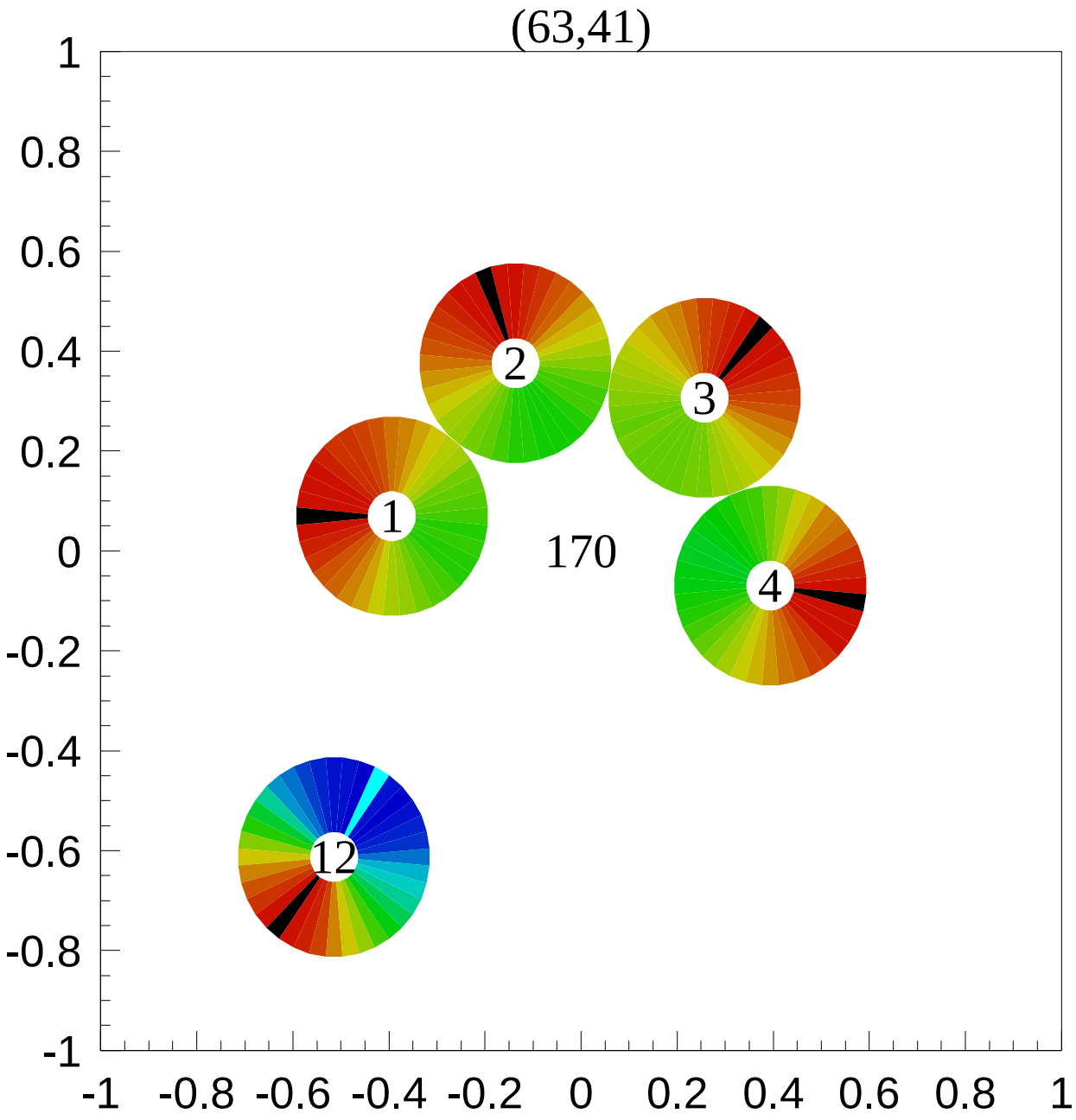

(63,13)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

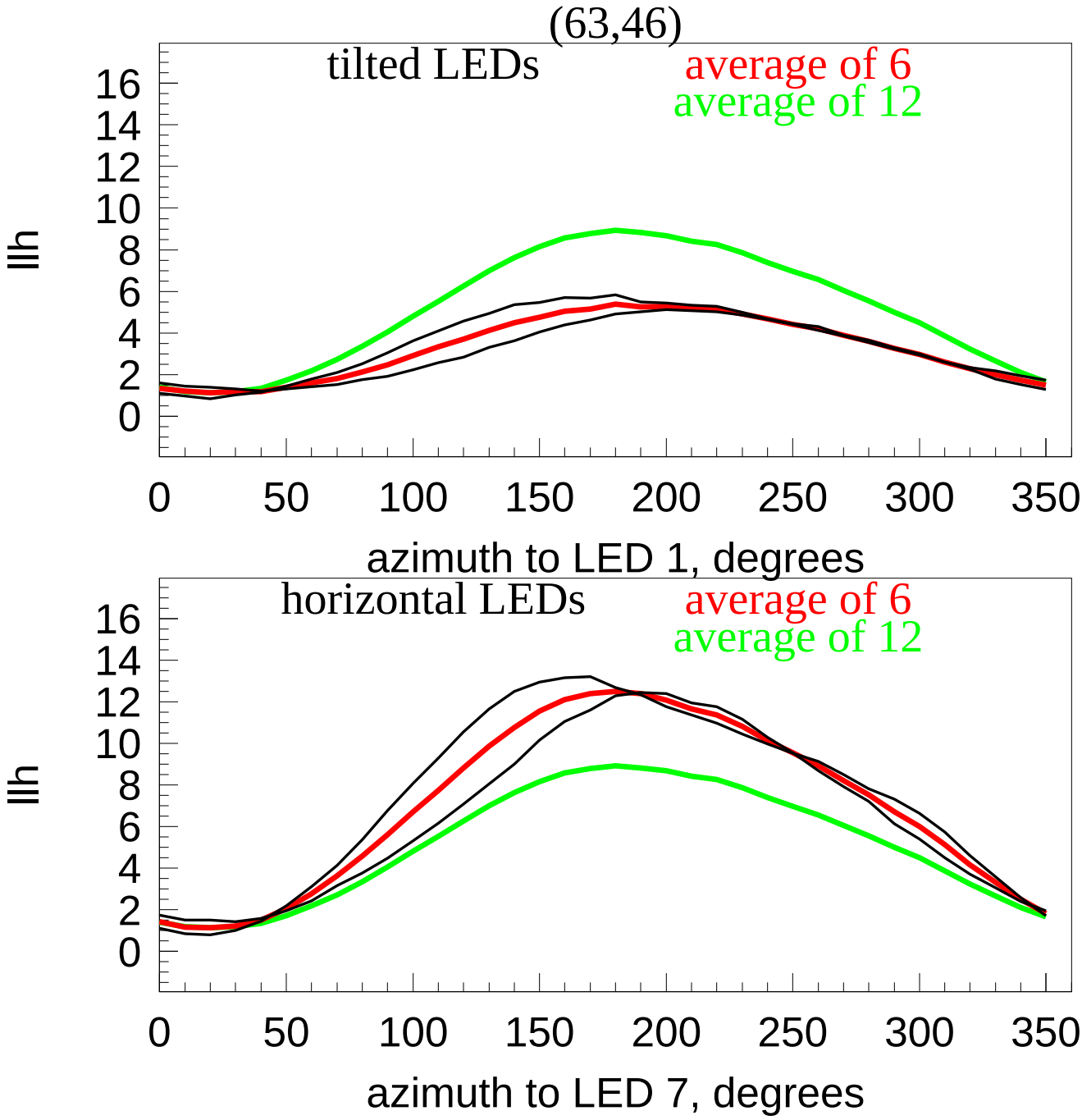

(63,13)
280
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

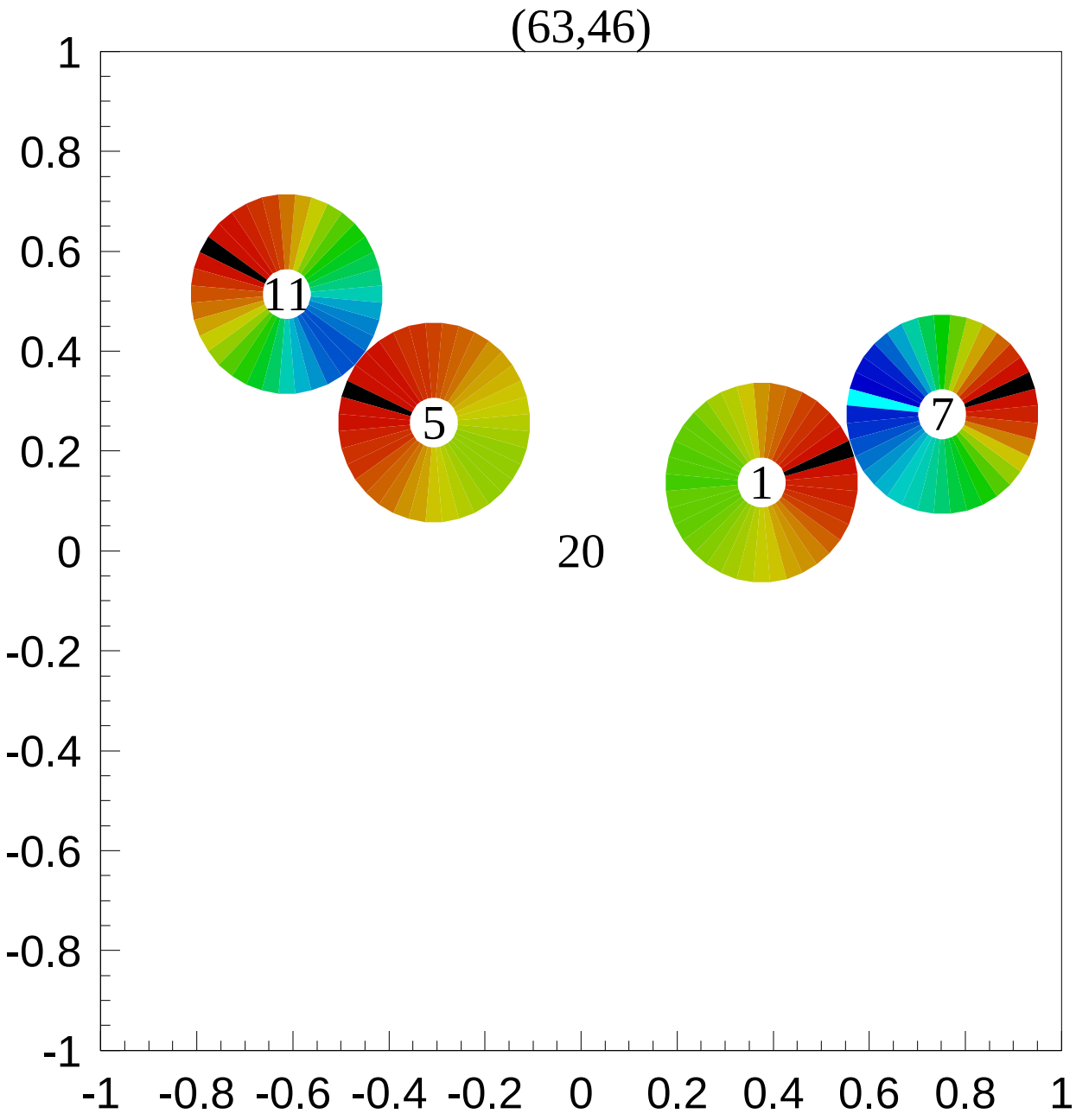

(63,15)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

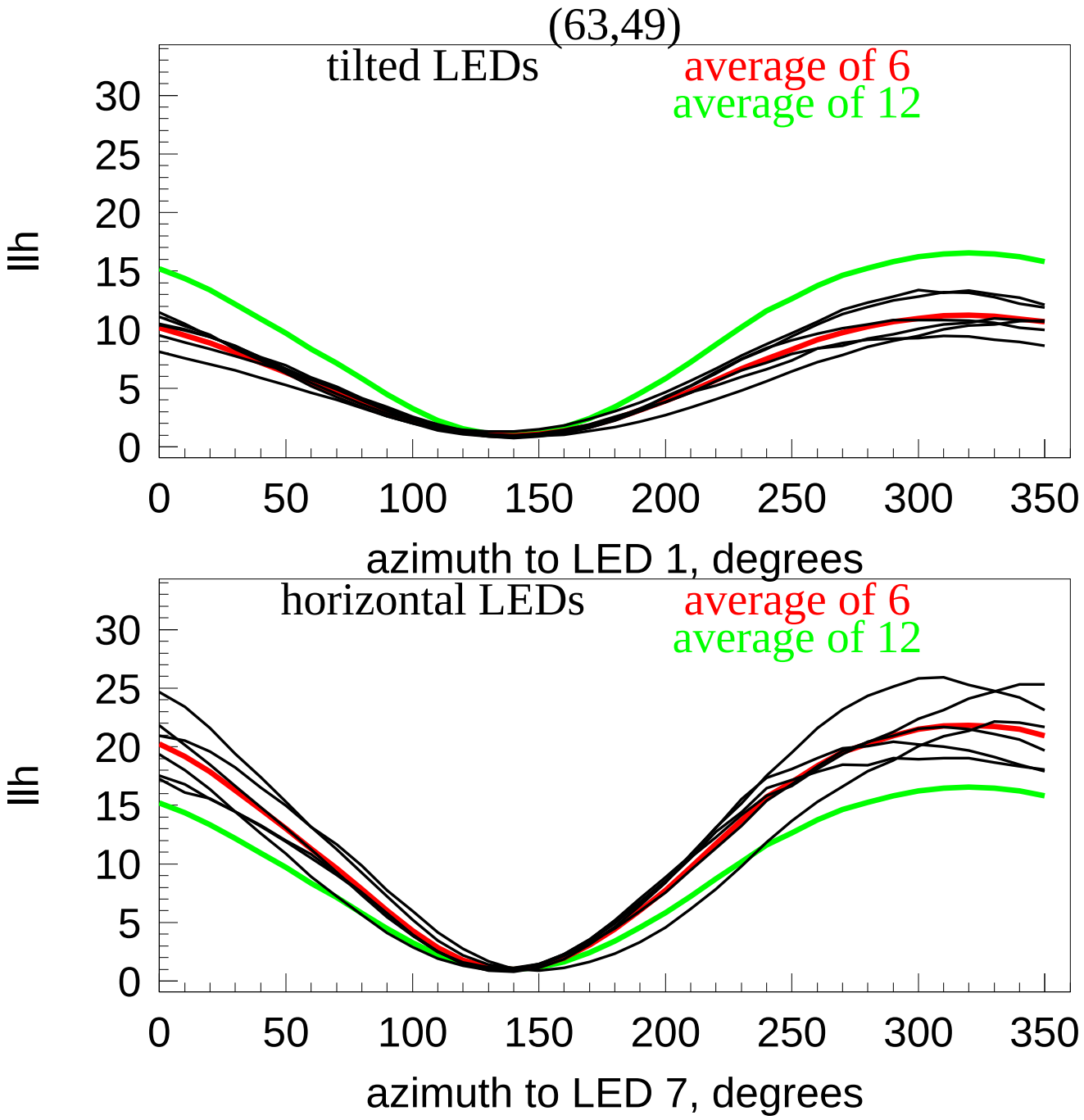

(63,15)
190
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

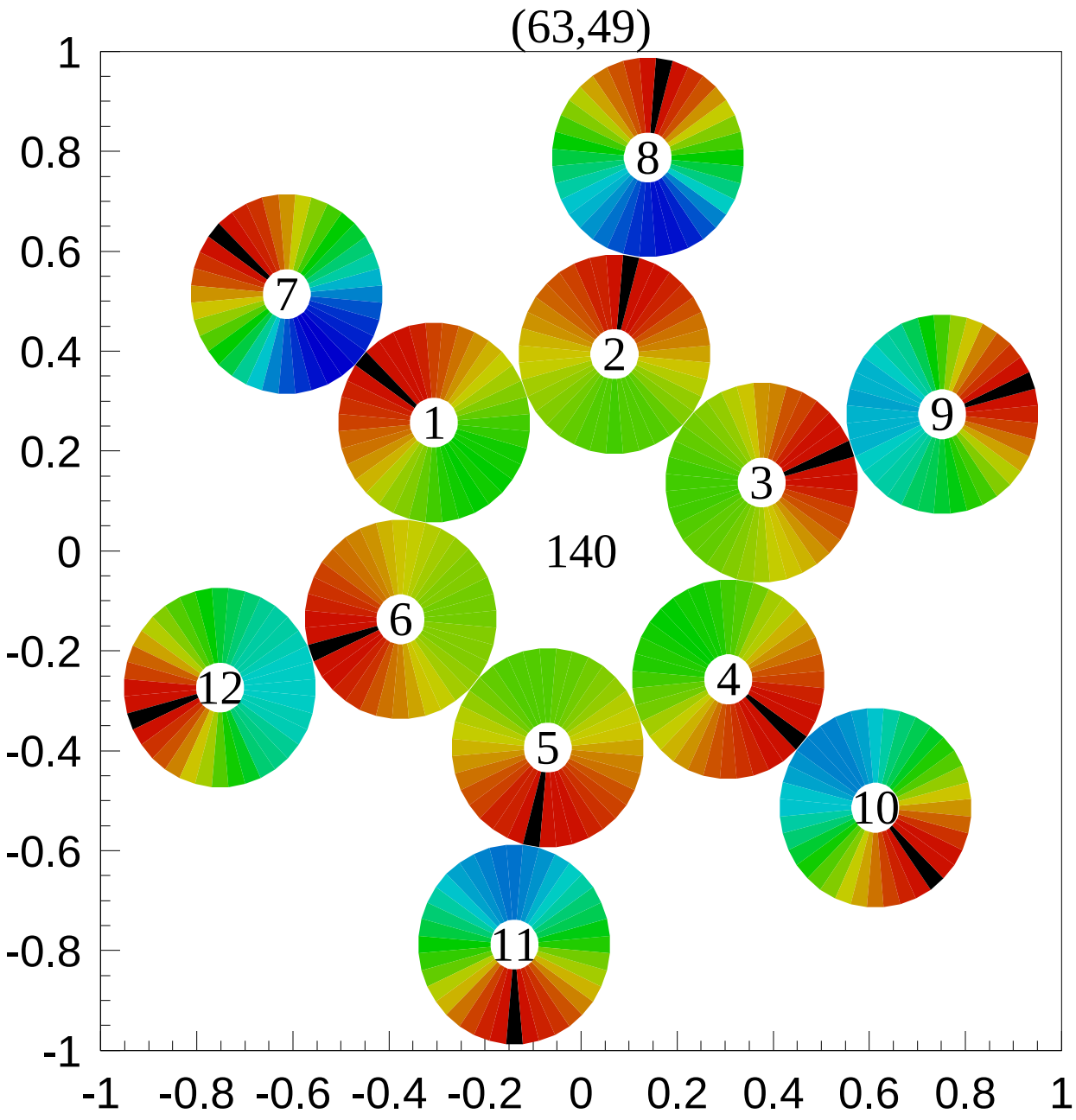

(63,41)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

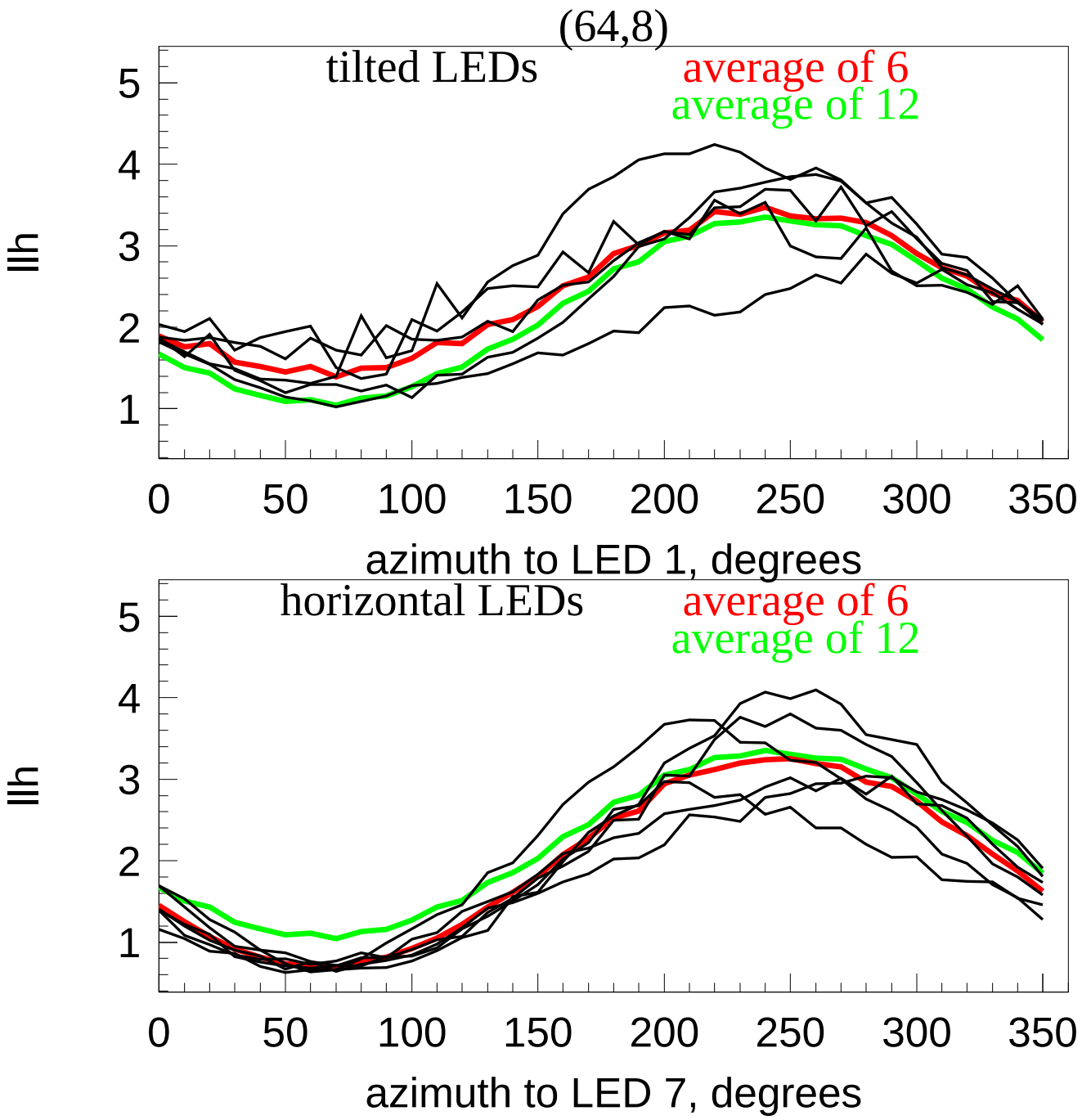

(63,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
2
3
1
170
4
12

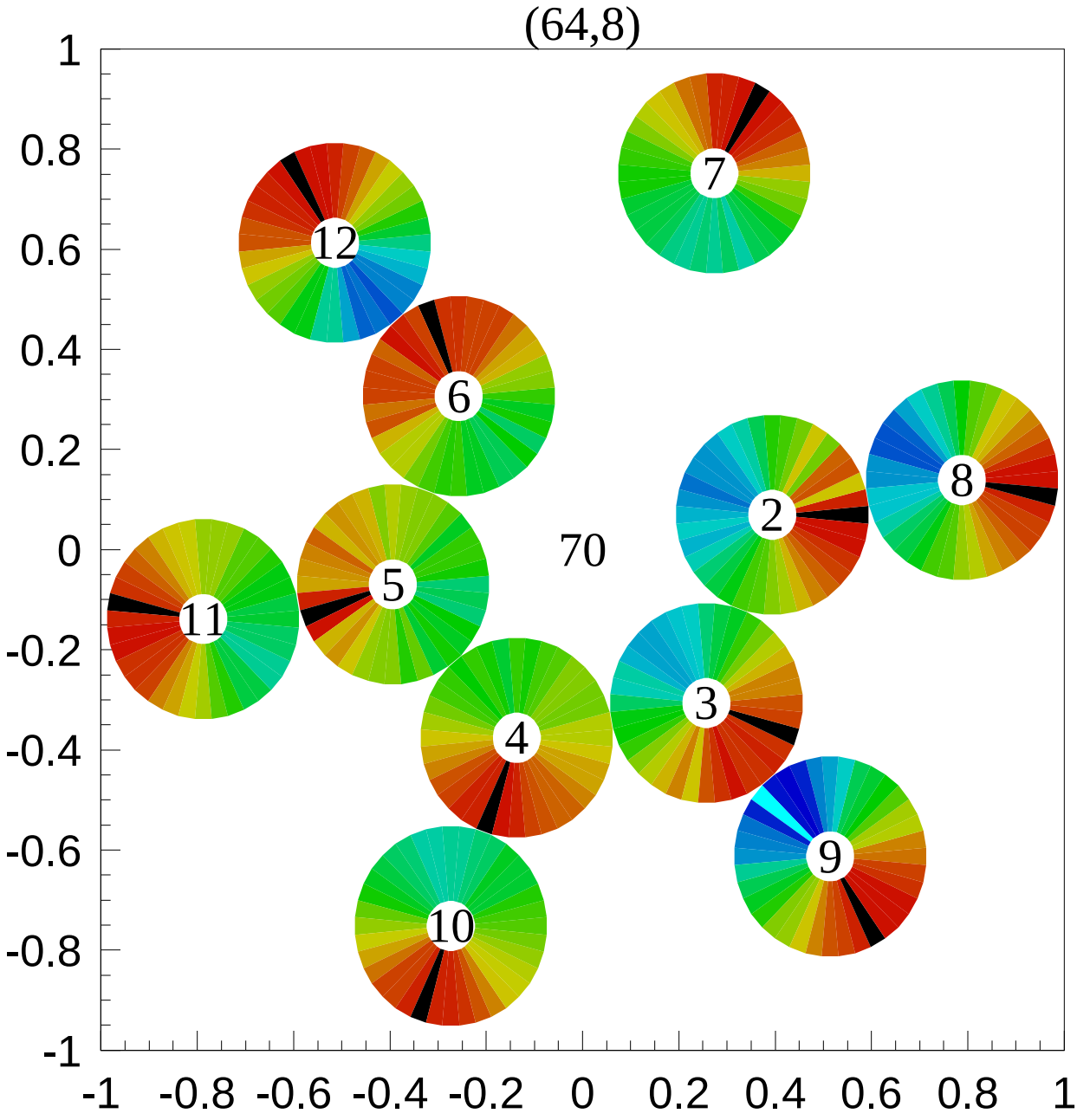

(63,46)
tilted LEDs
average of 6
average of 12
16
14
12
10
8
6
4
2
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
16
14
12
10
8
6
4
2
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

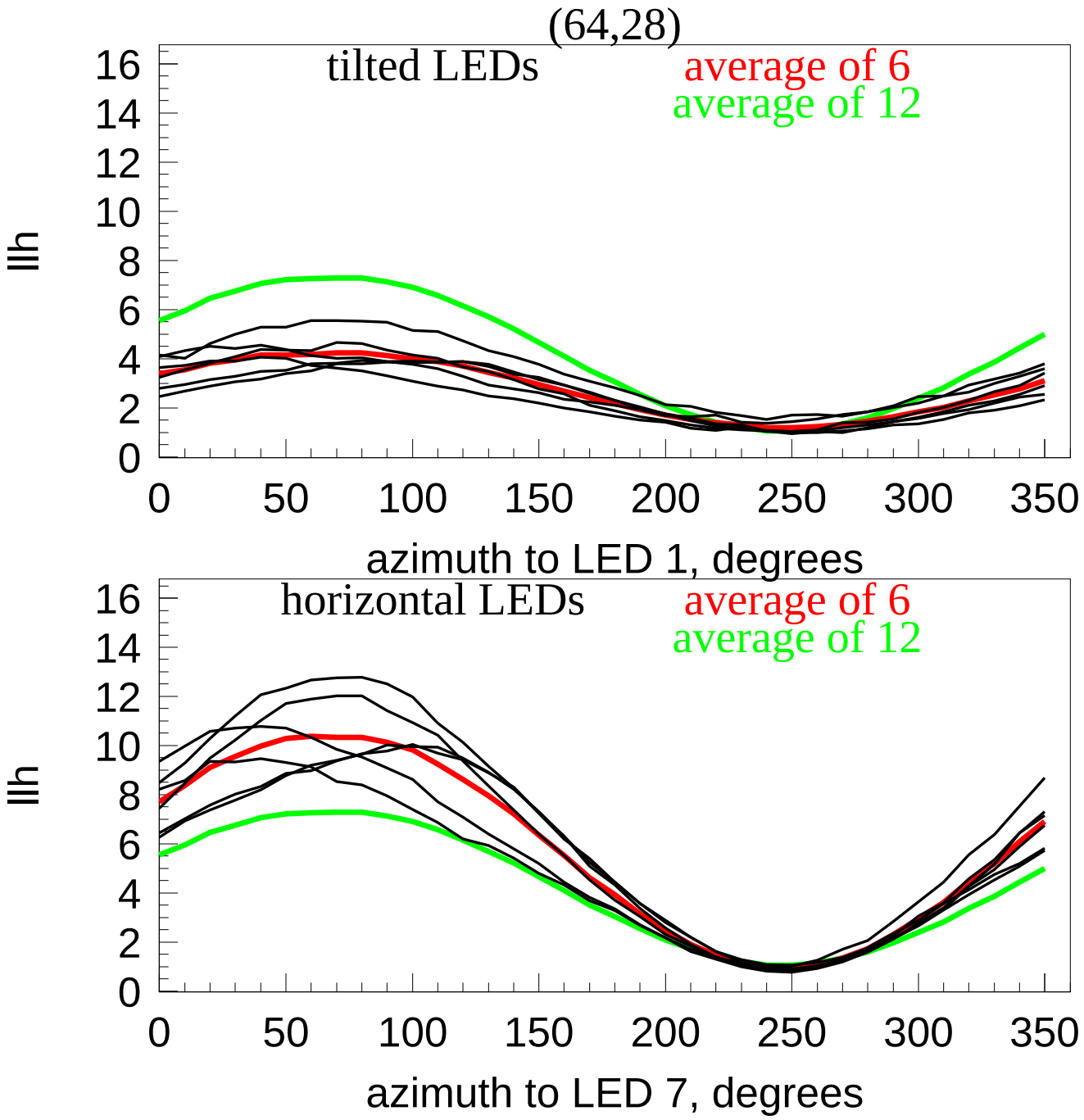

(63,46)
11
5
1
7
20
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

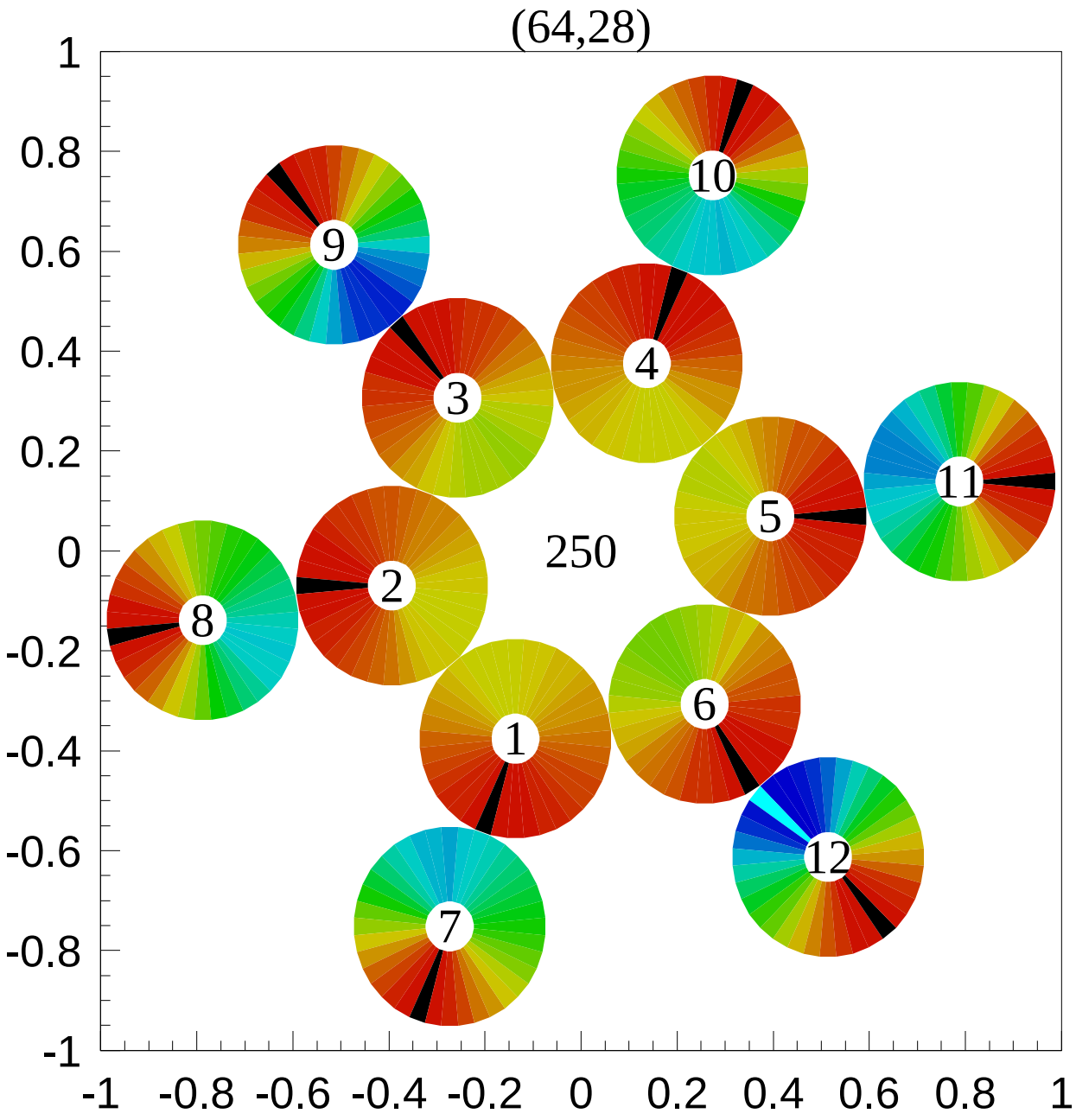

(63,49)
tilted LEDs
average of 6
average of 12
30
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
30
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

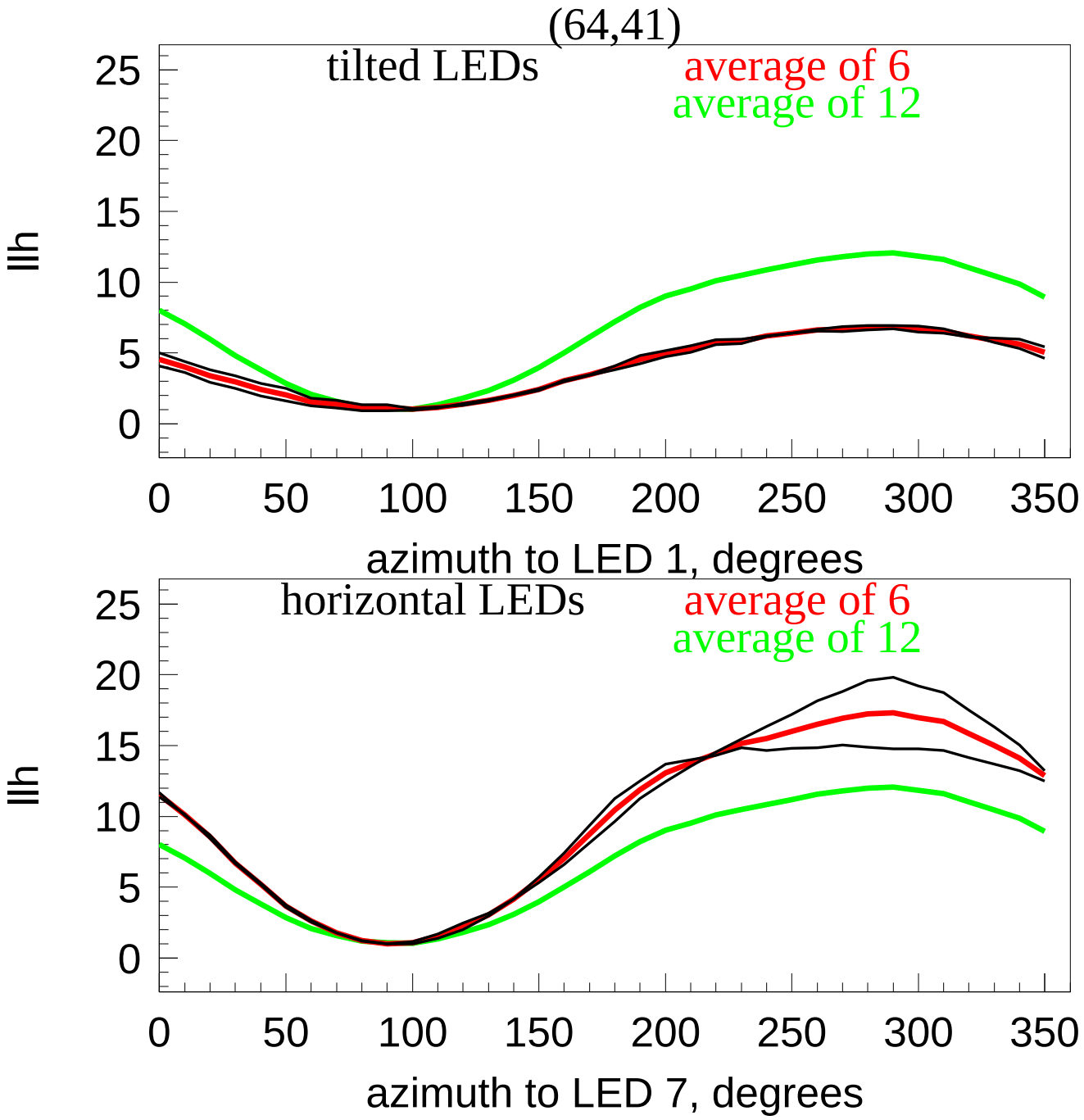

(63,49)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
140
1
2
3
4
5
6
7
8
9
10
11
12

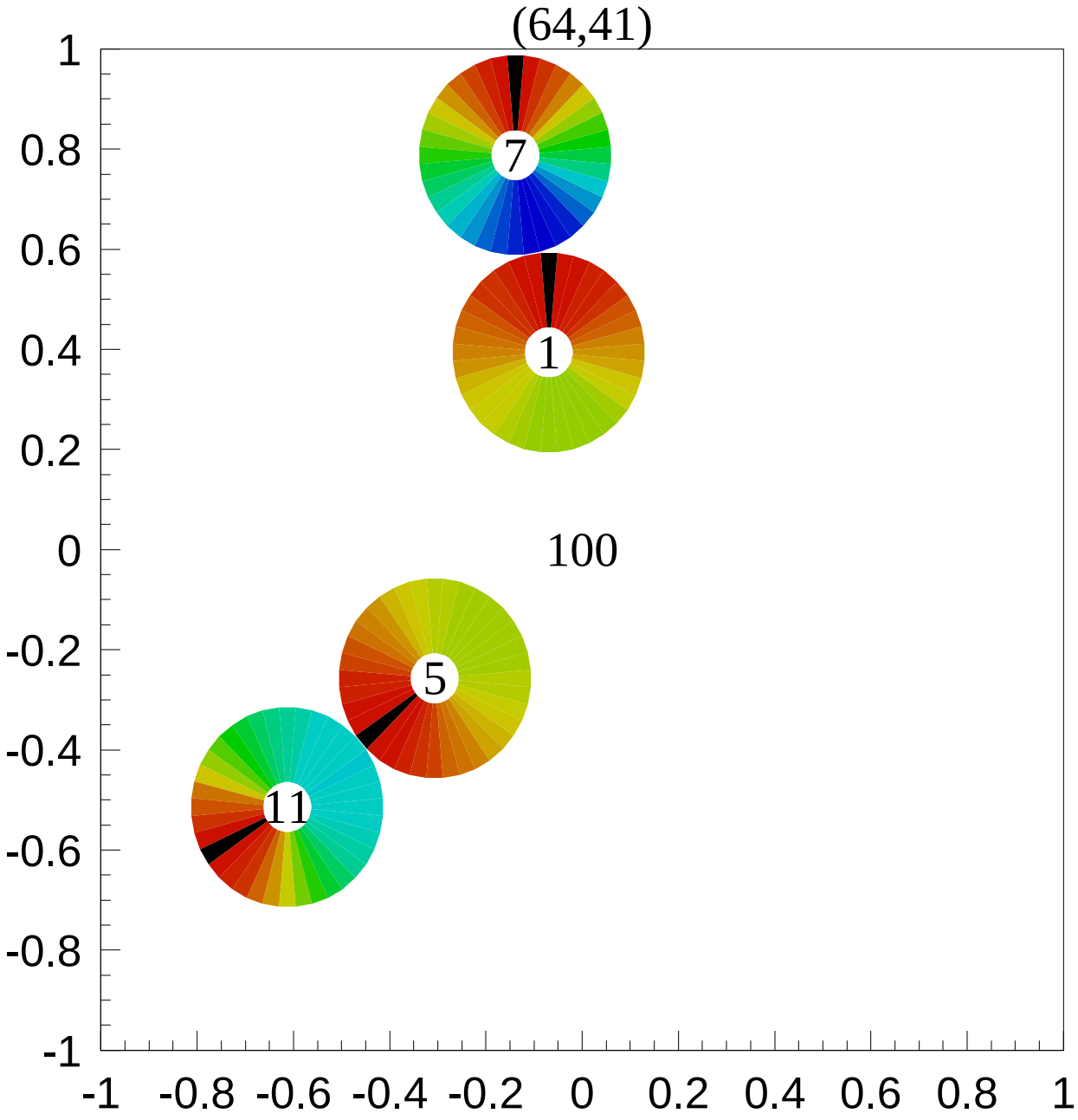

(64,8)
tilted LEDs
average of 6
average of 12
Ilh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

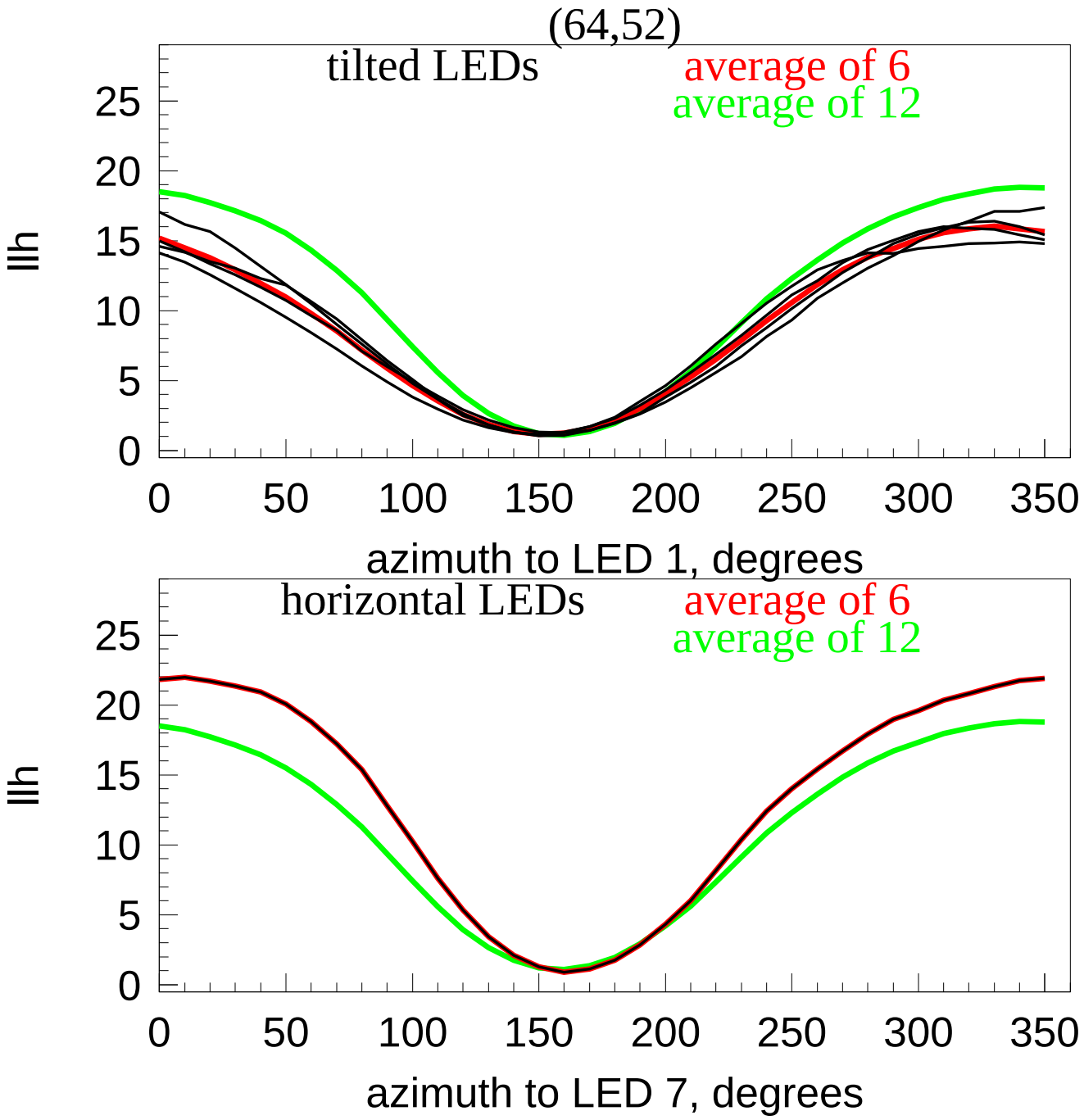

(64,8)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
7
6
8
2
70
5
11
3
4
9
10

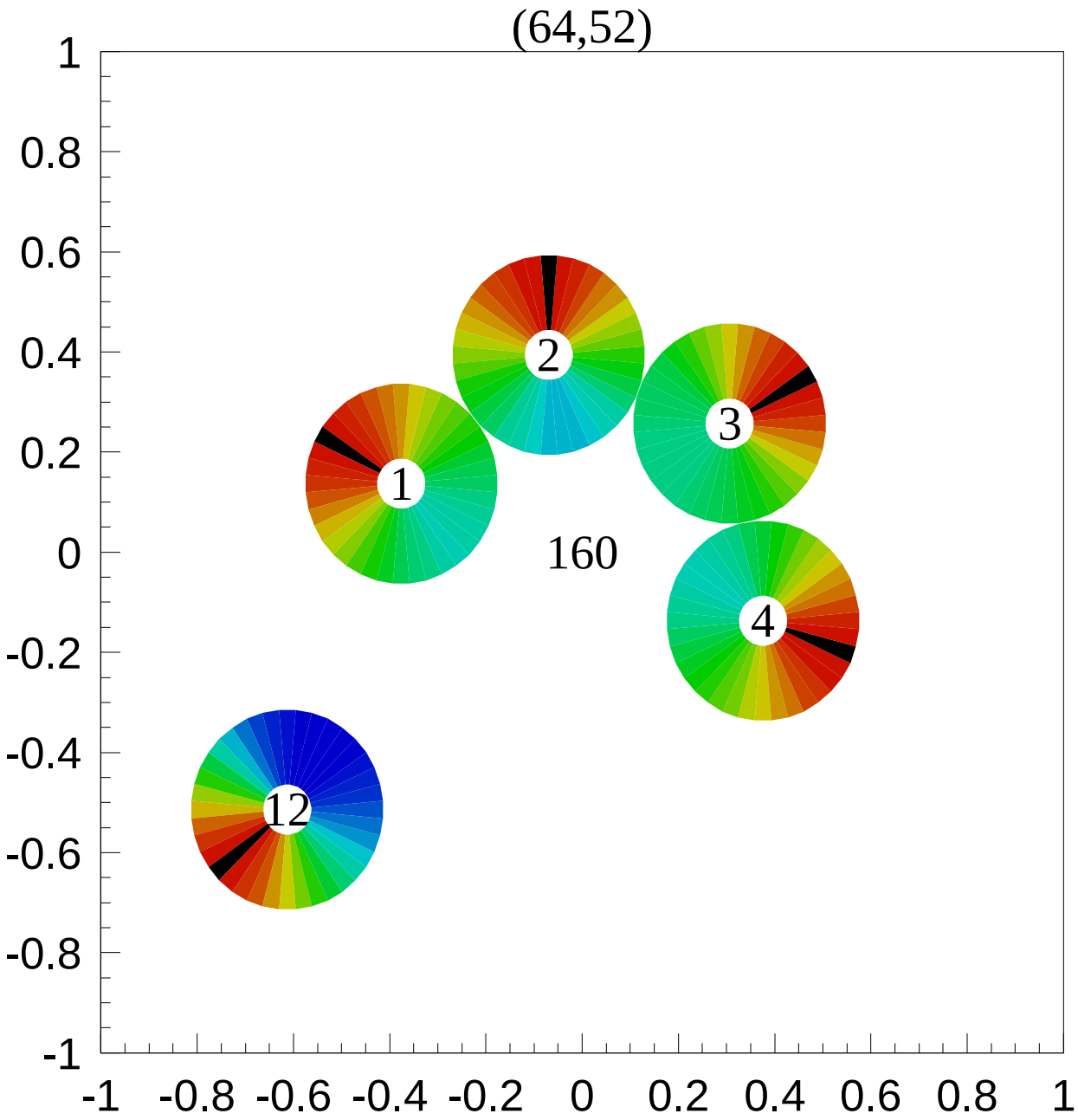

(64,28)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

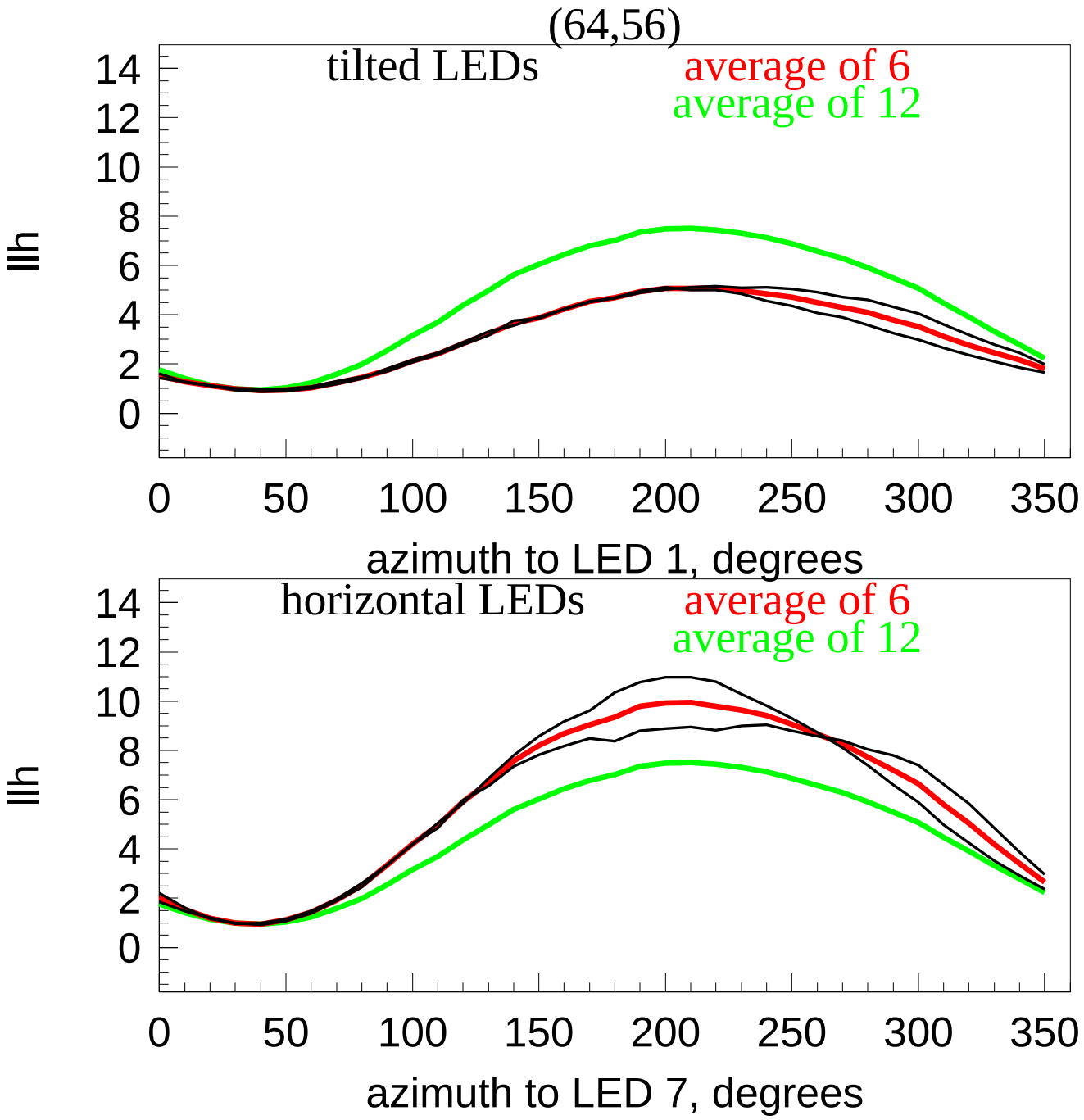

(64,28)
250
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

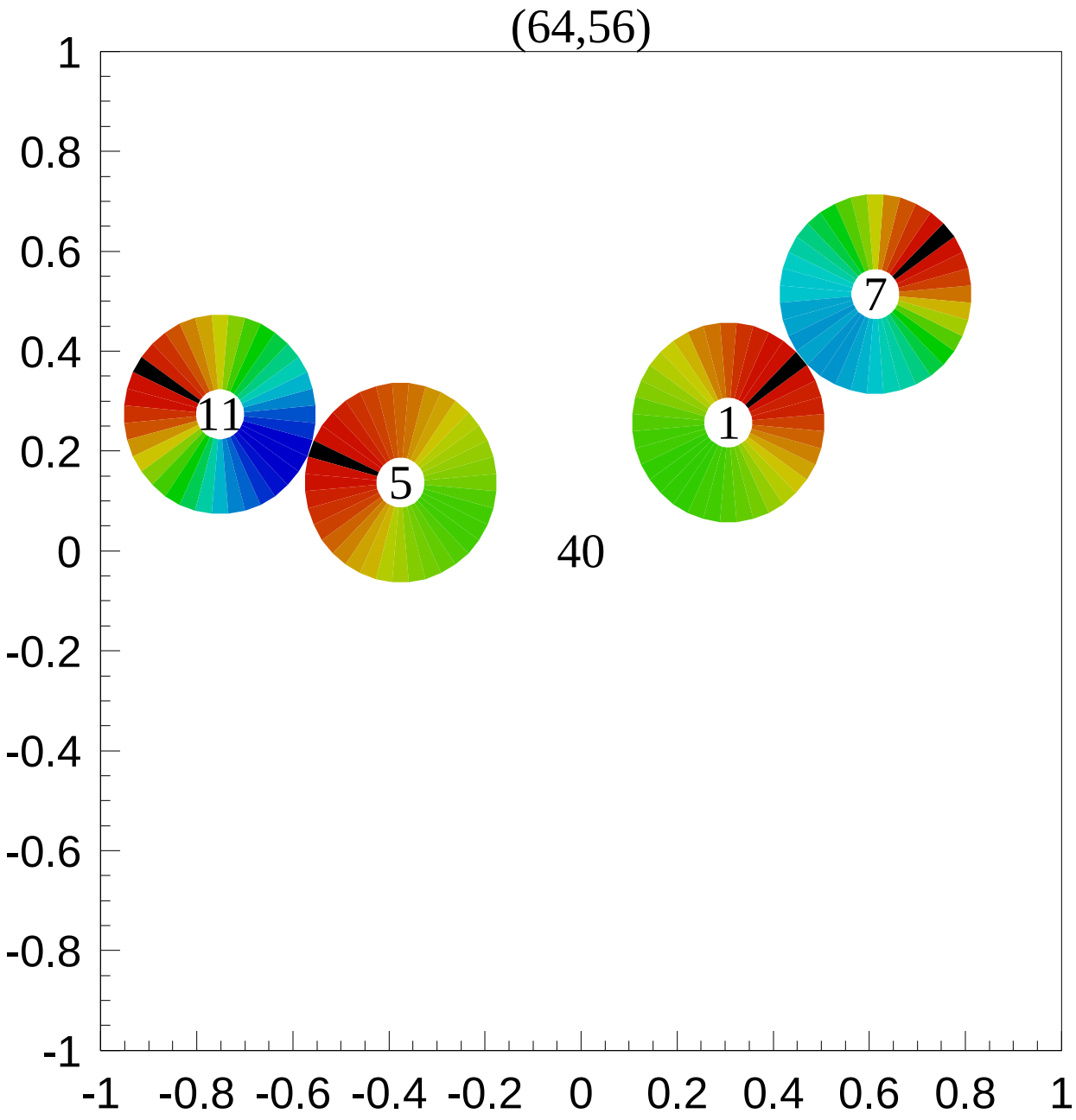

(64,41)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

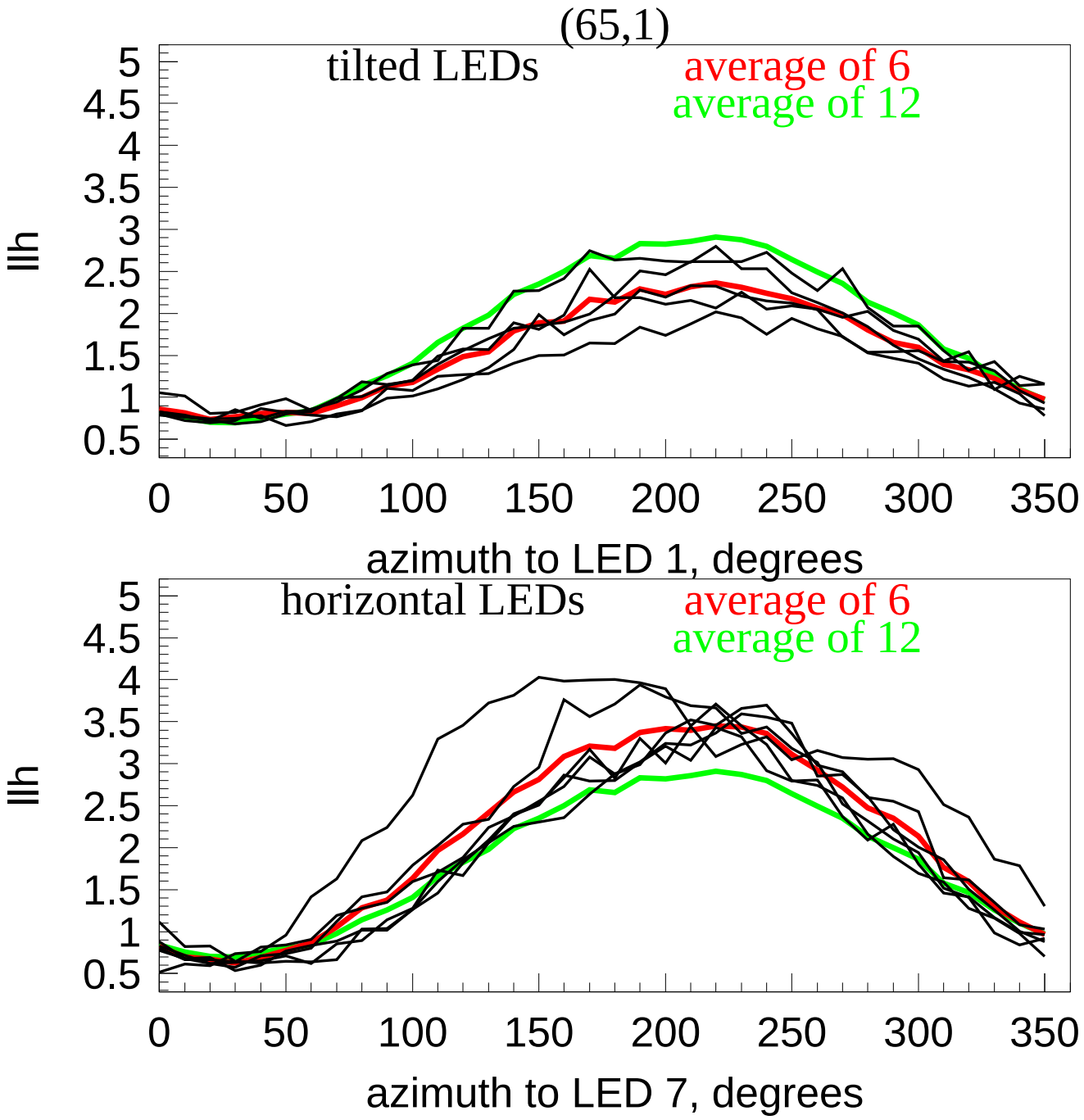

(64,41)
7
1
100
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

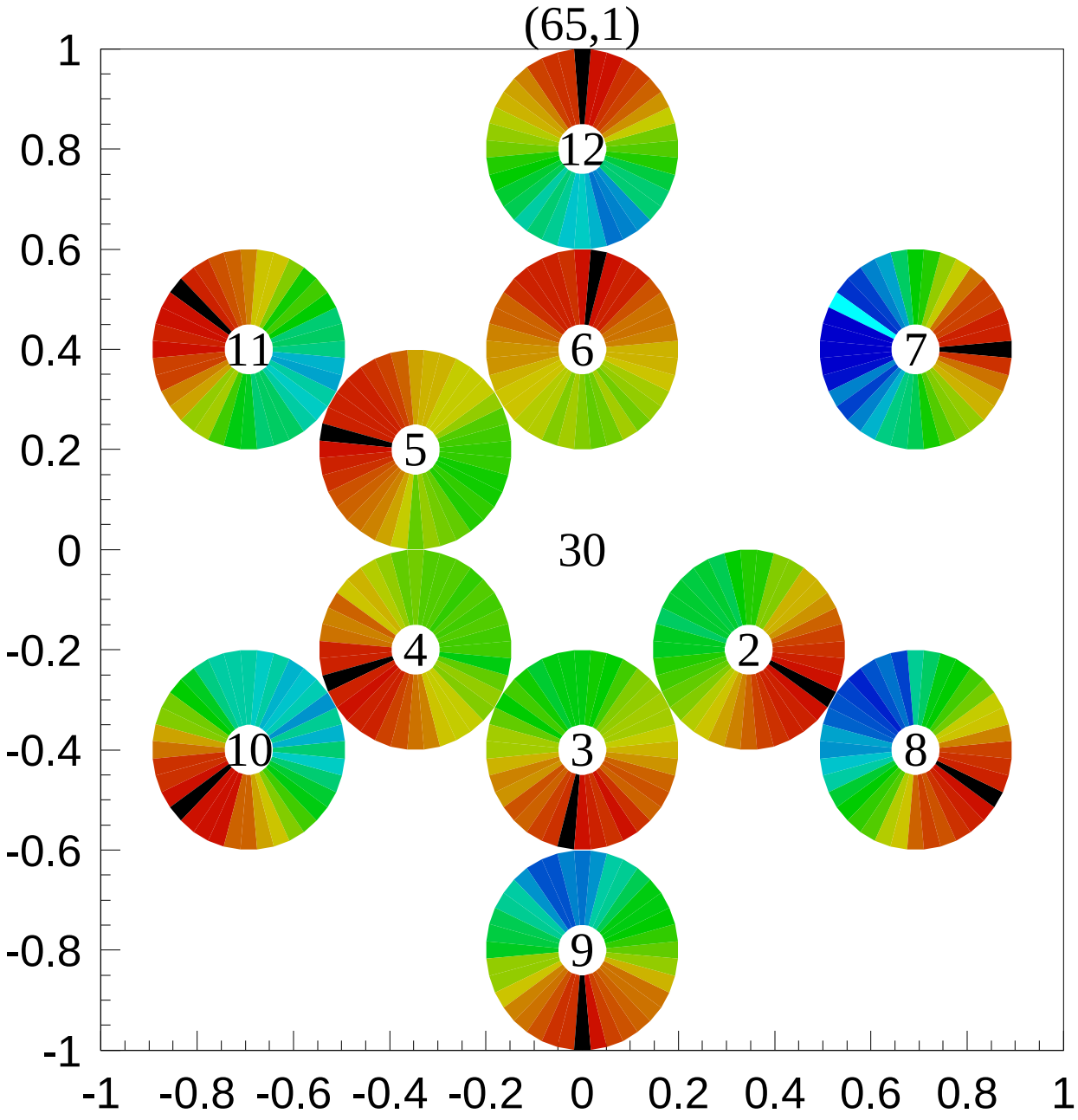

(64,52)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

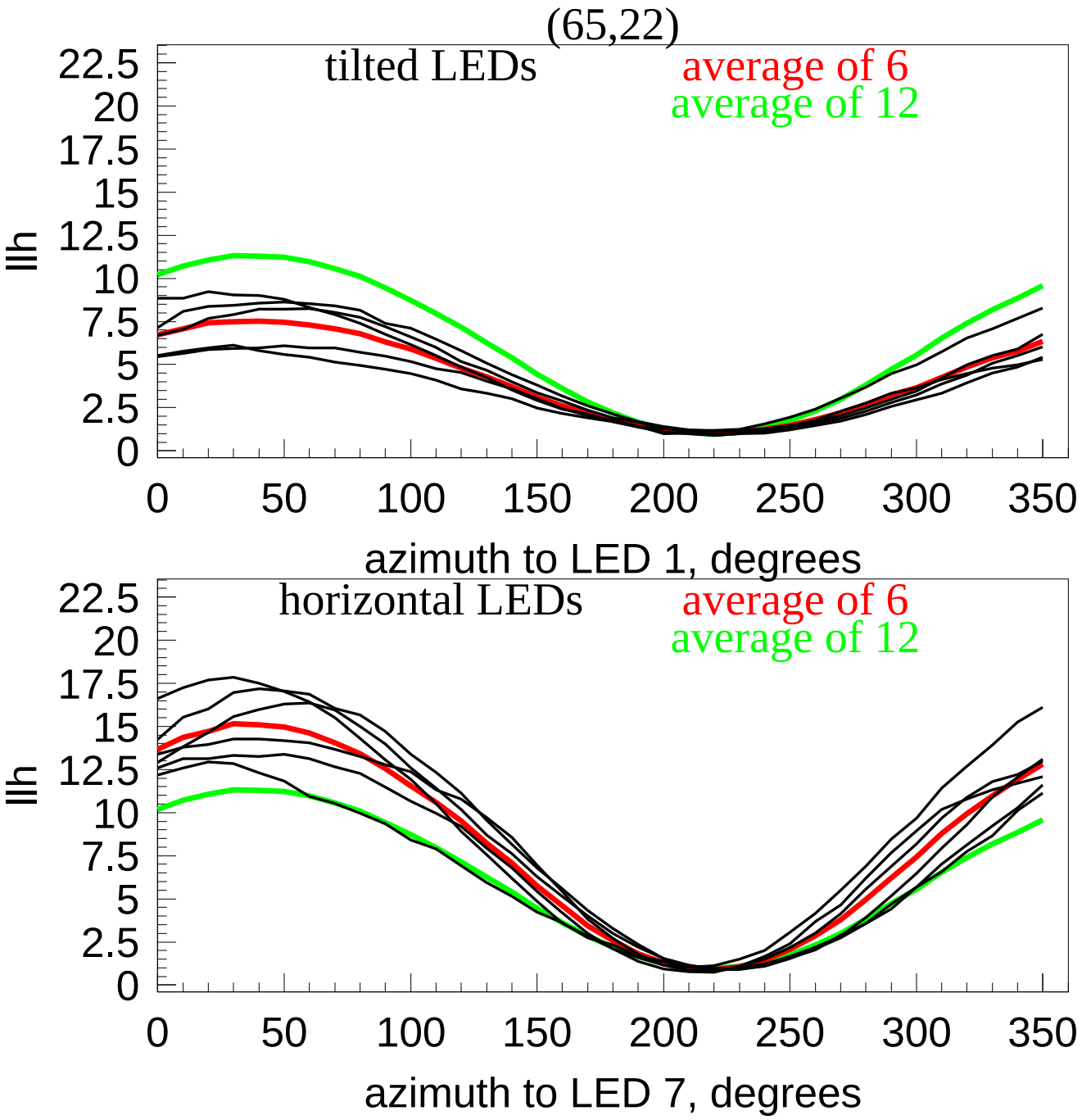

(64,52)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
1
2
3
4
12
160

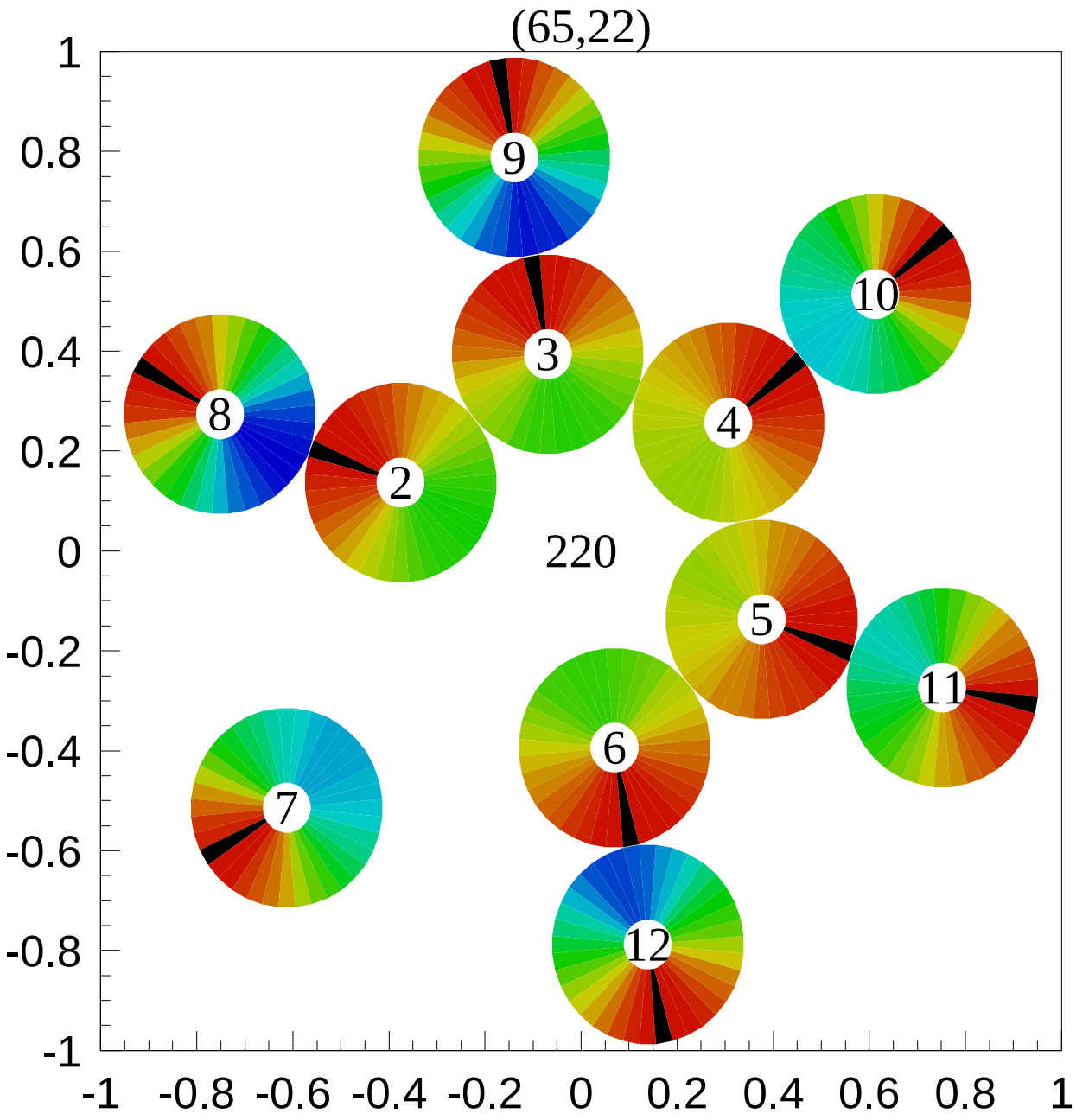

(64,56)
tilted LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

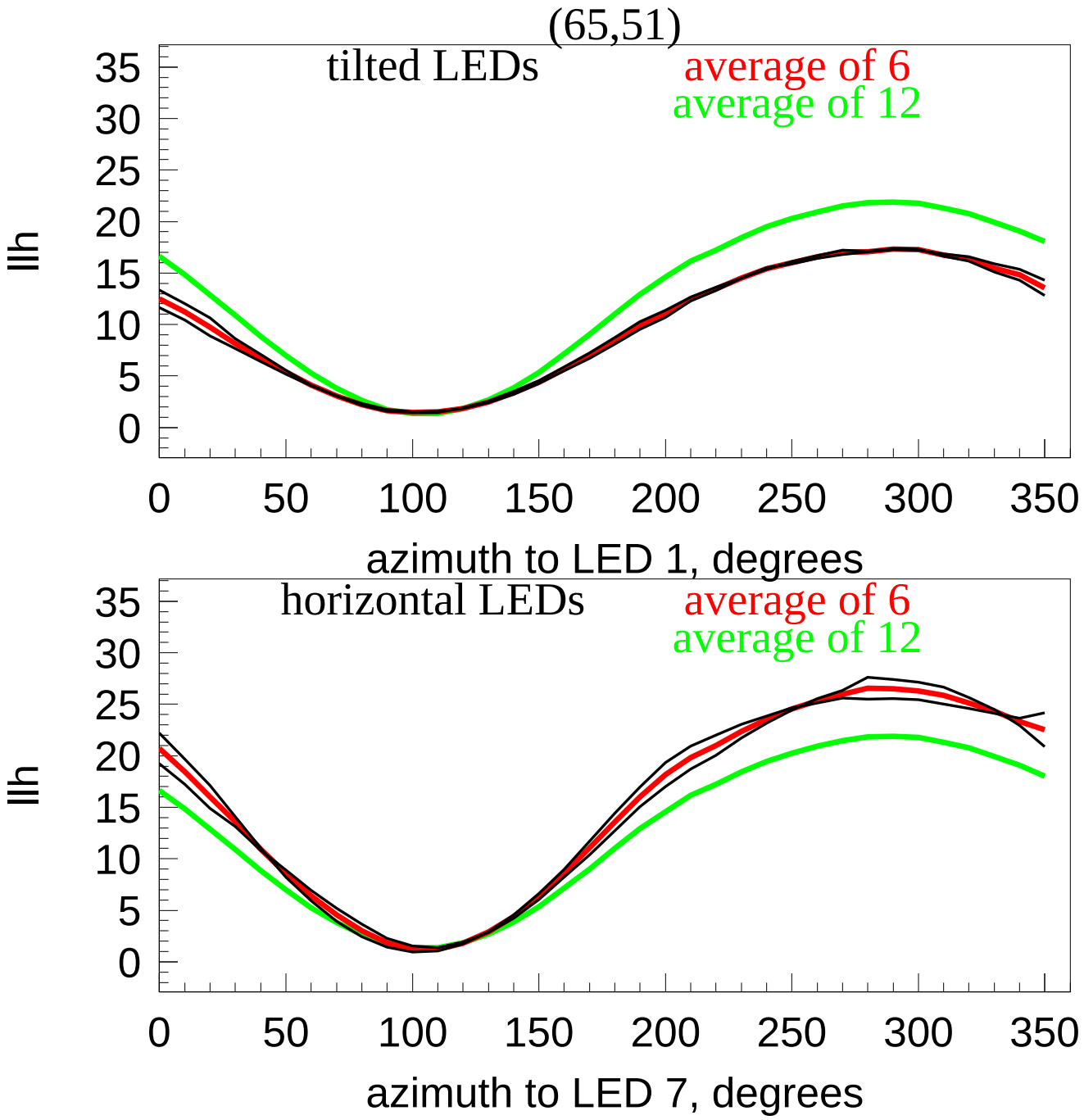

(64,56)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
40
1
7

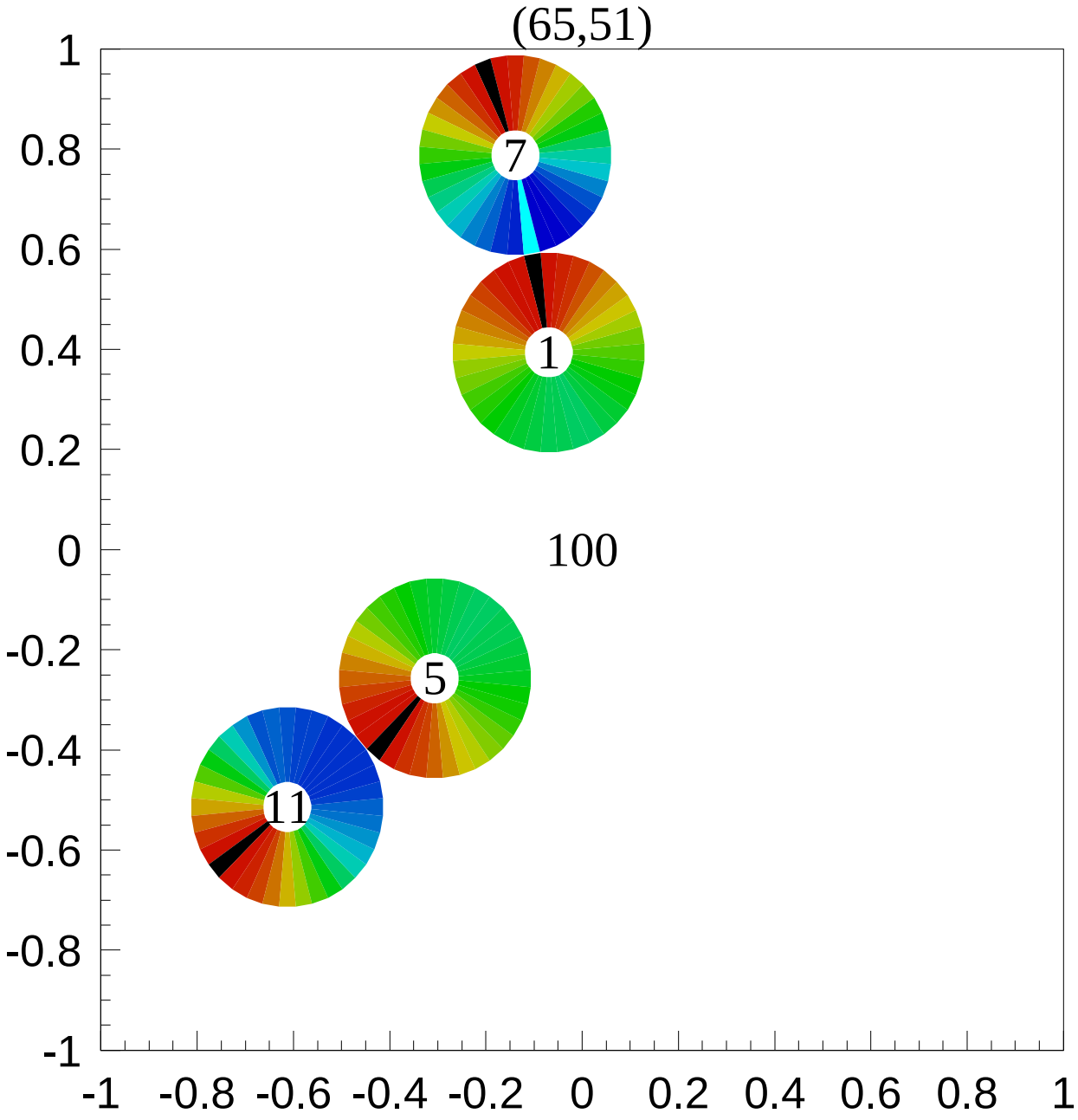

(65,1)
tilted LEDs
average of 6
average of 12
llh
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

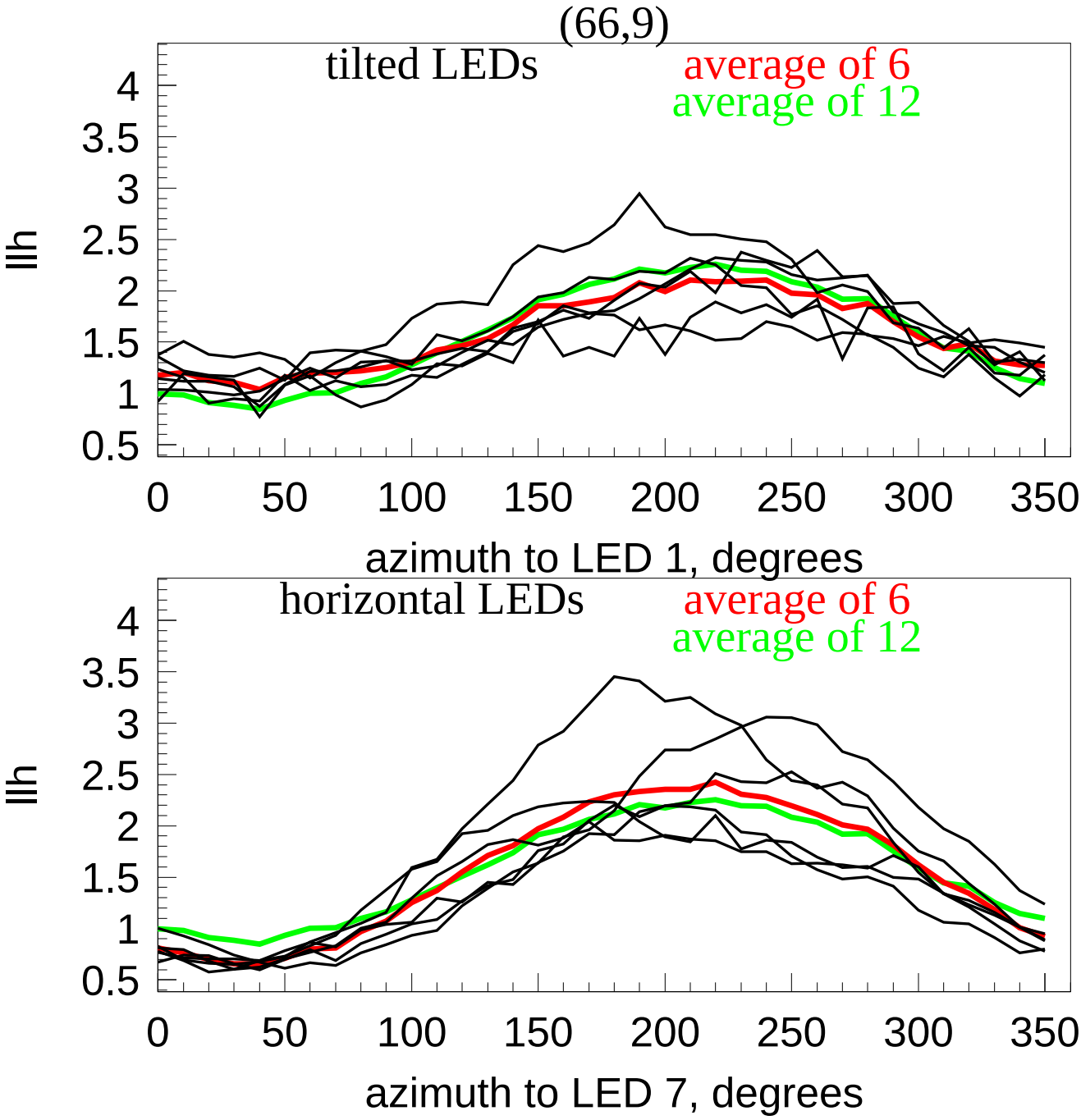

(65,1)
12
11
6
7
5
30
4
2
10
3
8
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

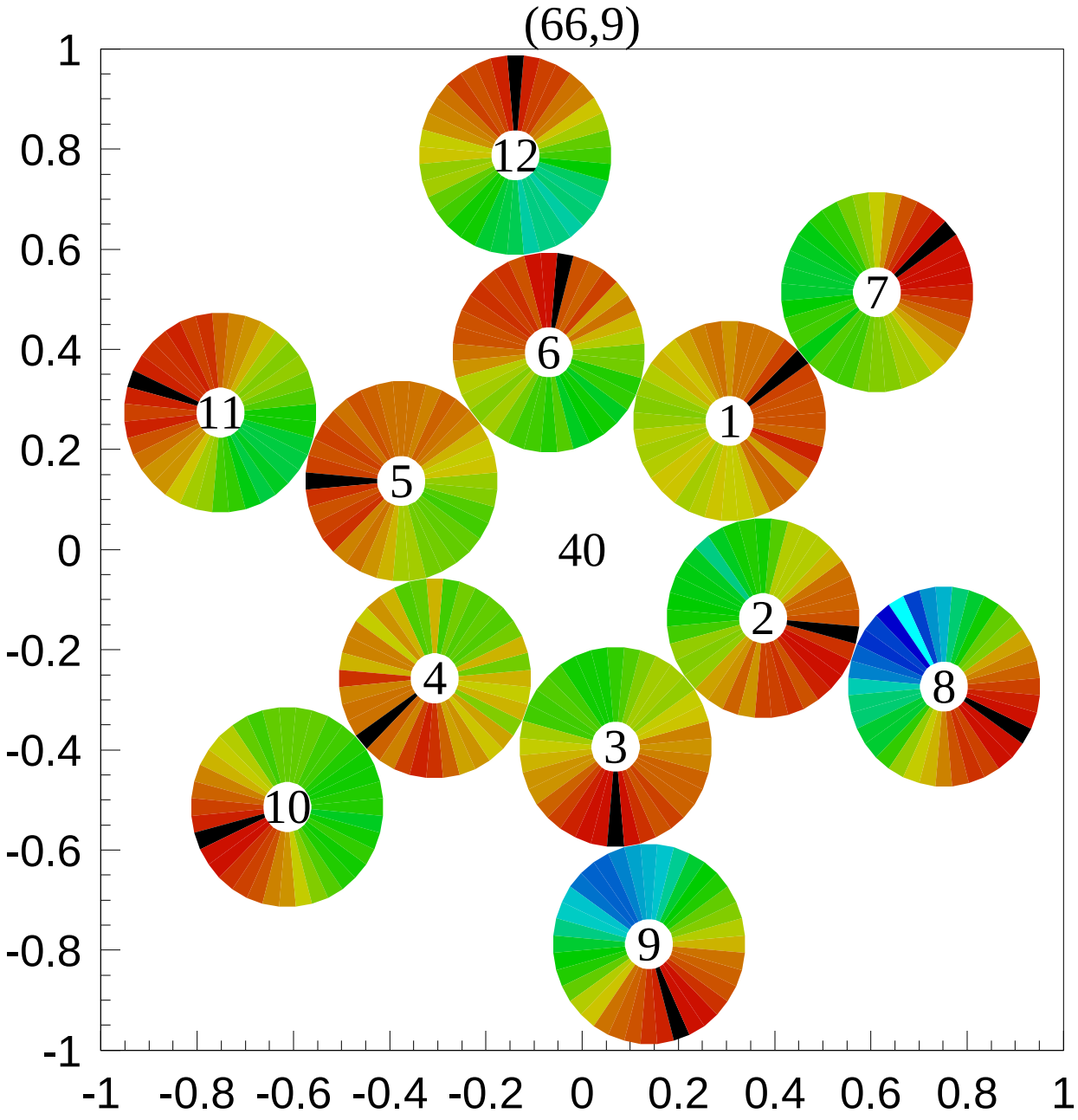

(65,22)
tilted LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

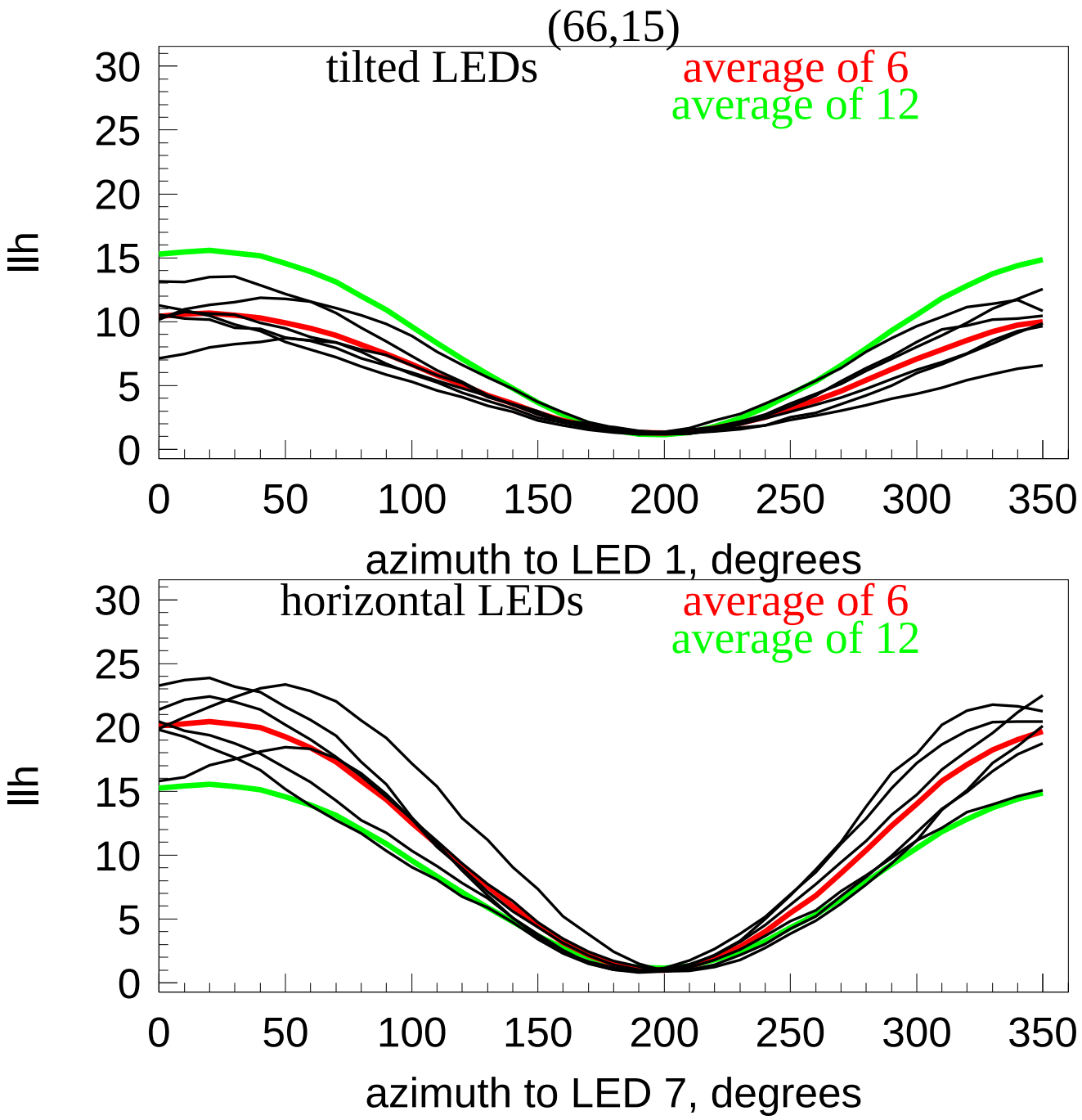

(65,22)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
10
3
8
4
2
220
5
11
6
7
12

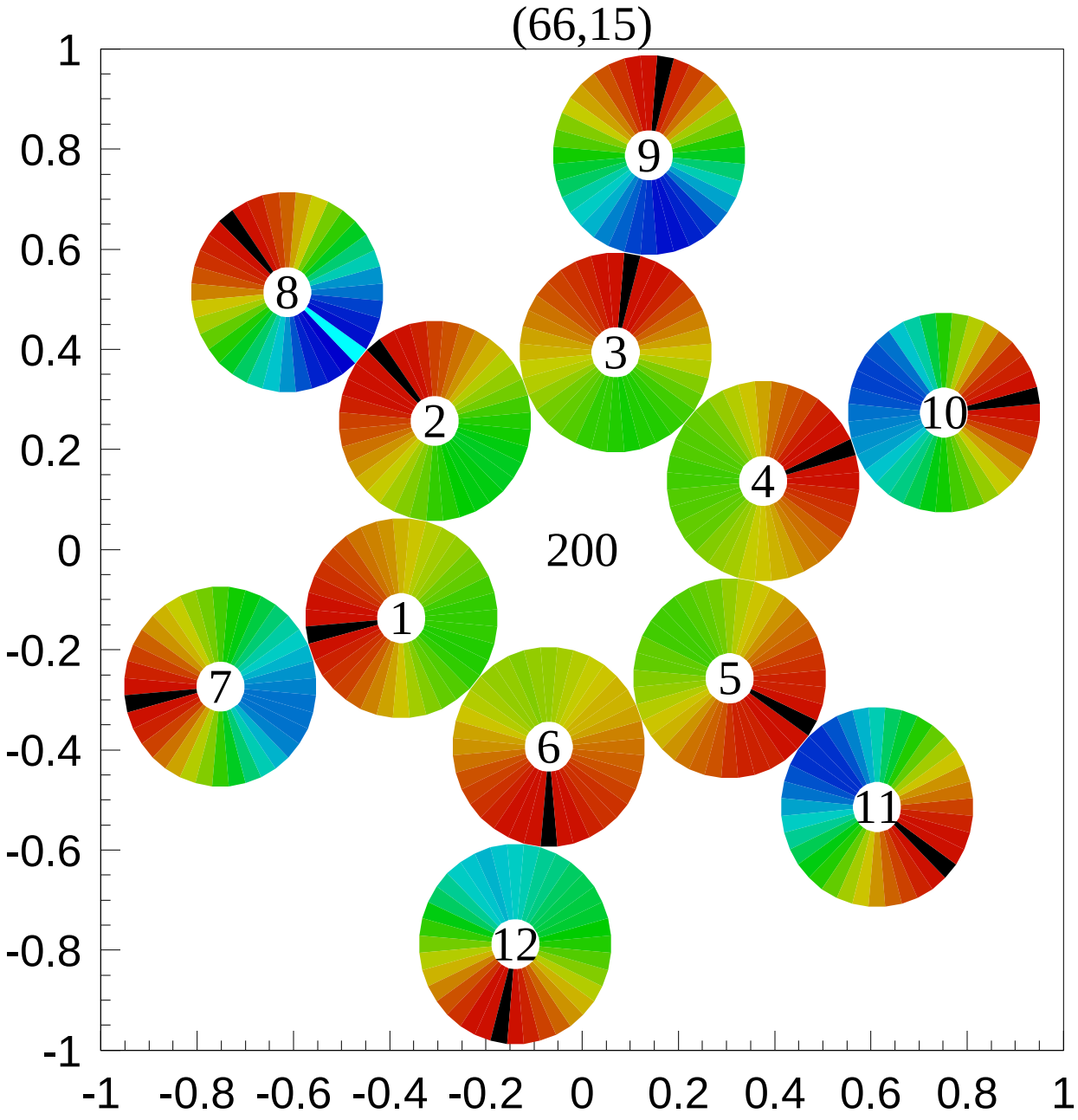

(65,51)
tilted LEDs
average of 6
average of 12
llh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

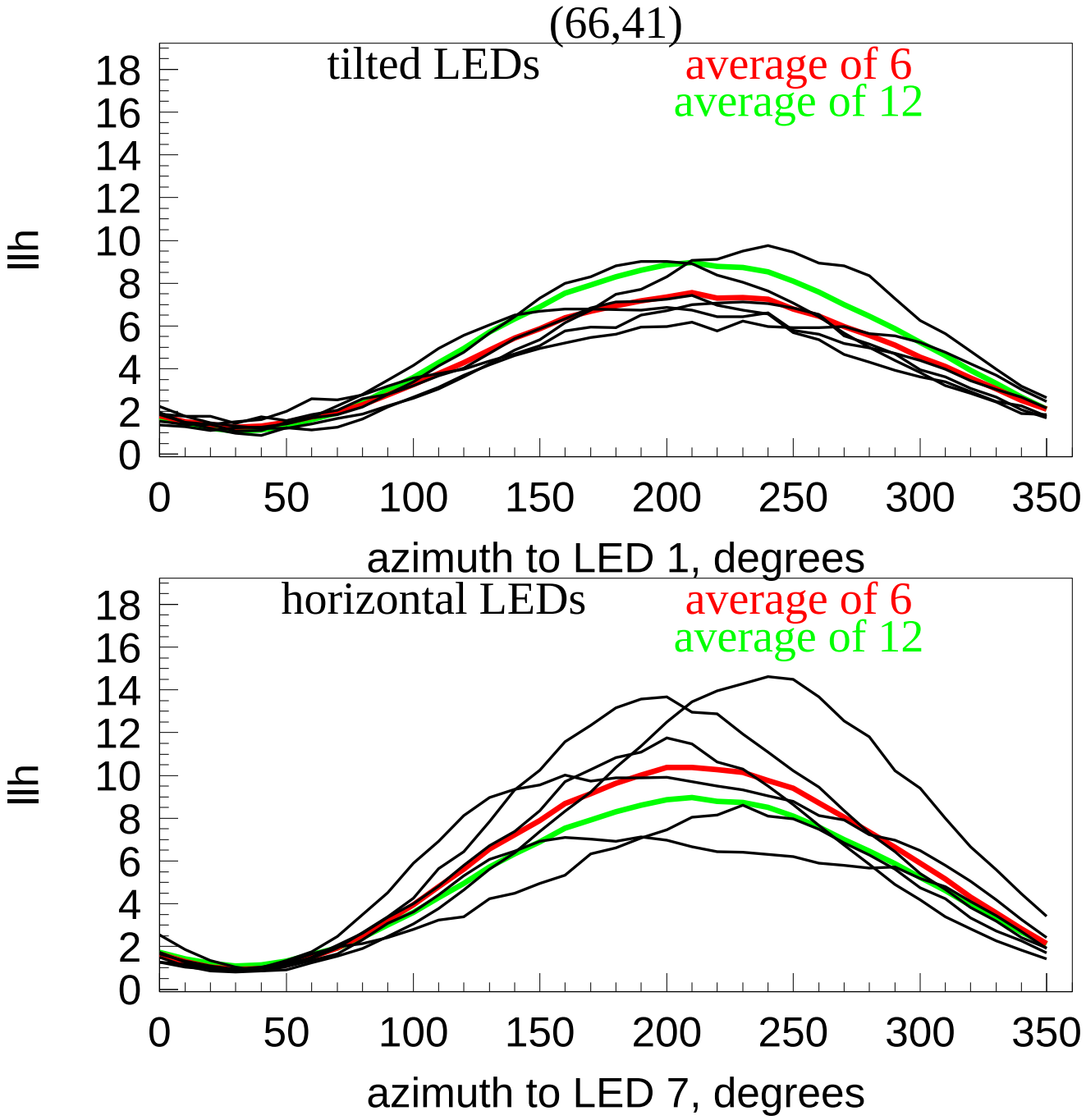

(65,51)
7
1
100
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

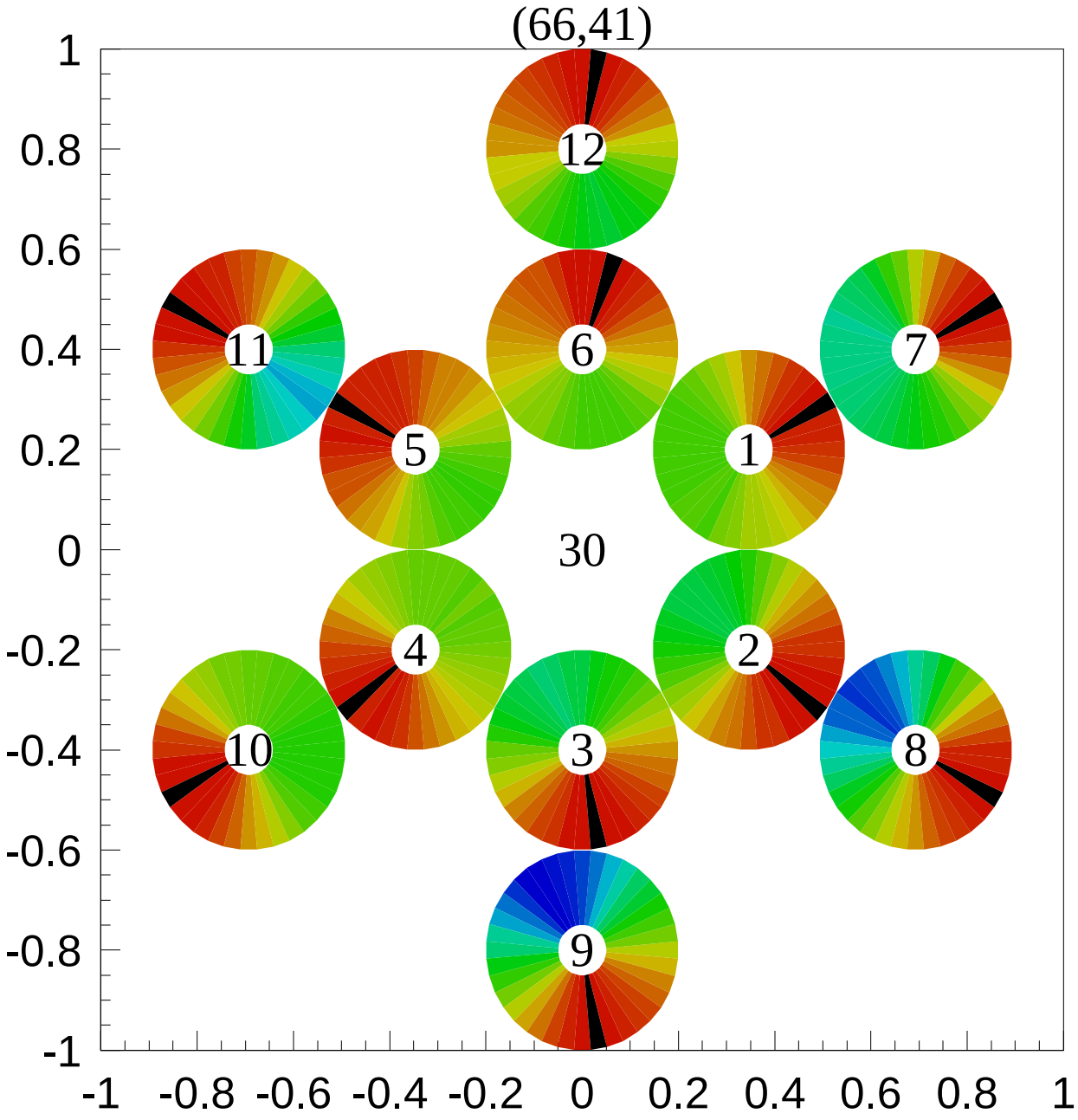

(66,9)
tilted LEDs
average of 6
average of 12
llh
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

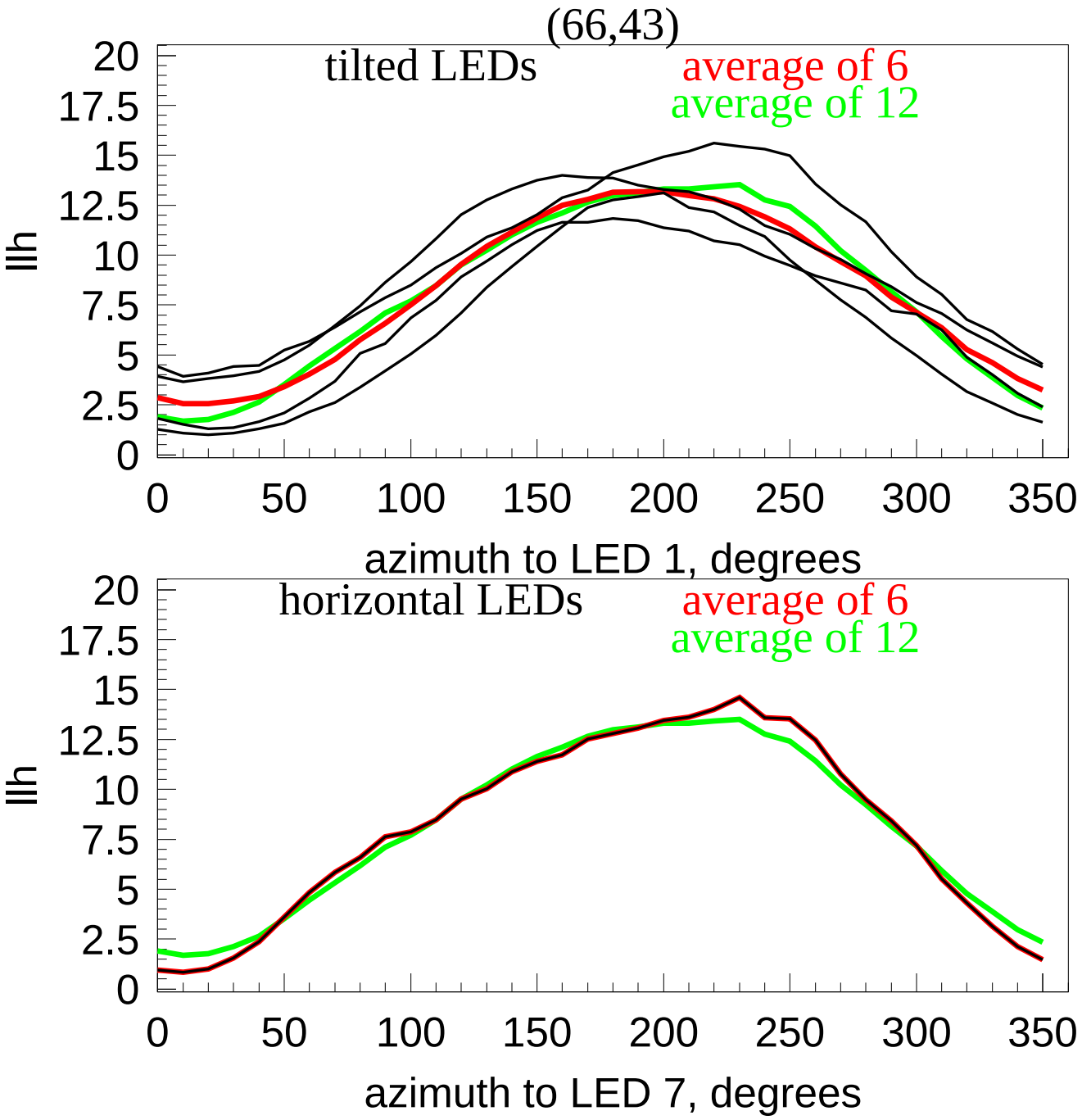

(66,9)
12
7
6
11
1
5
40
2
8
4
3
10
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

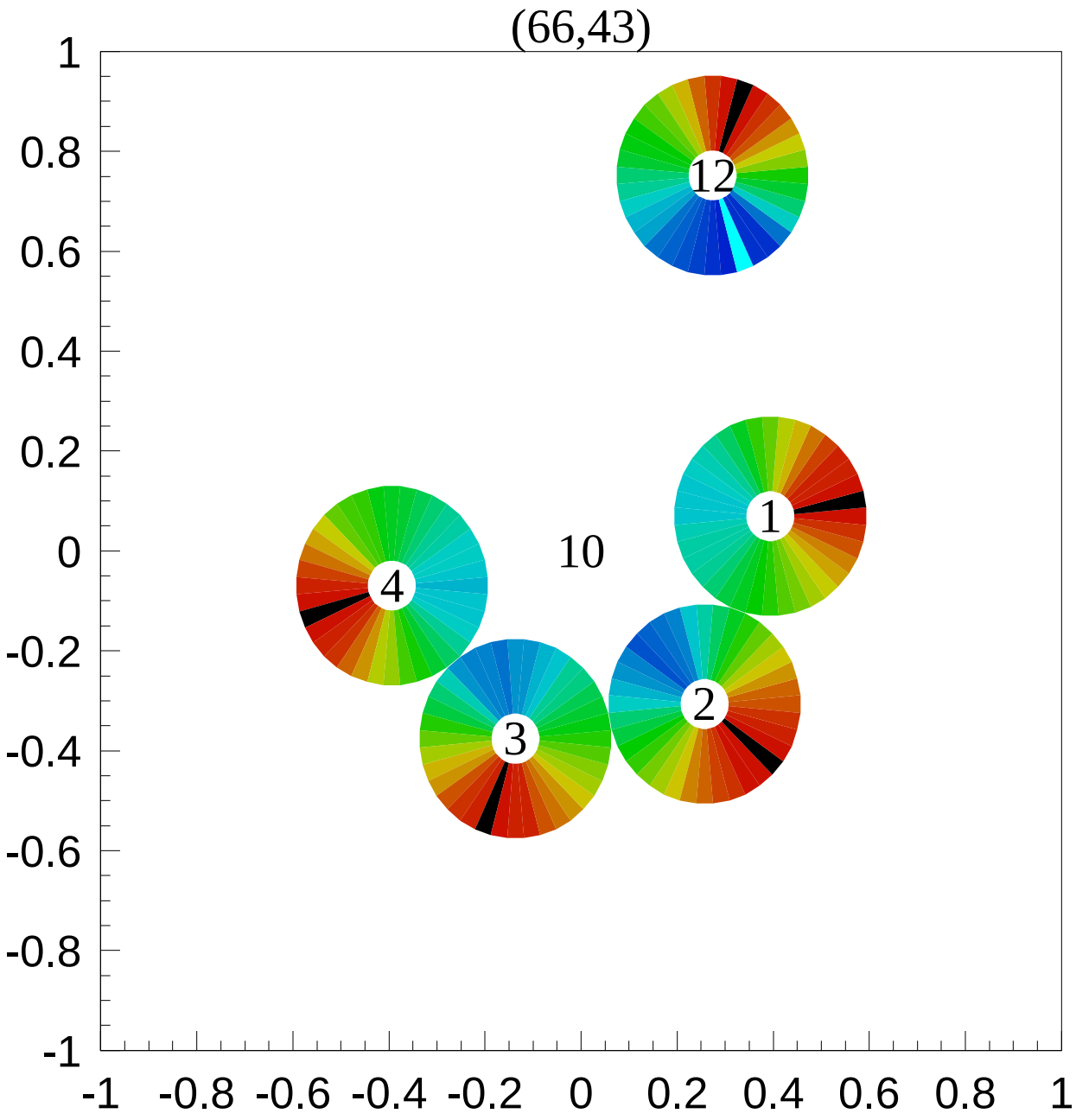

(66,15)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

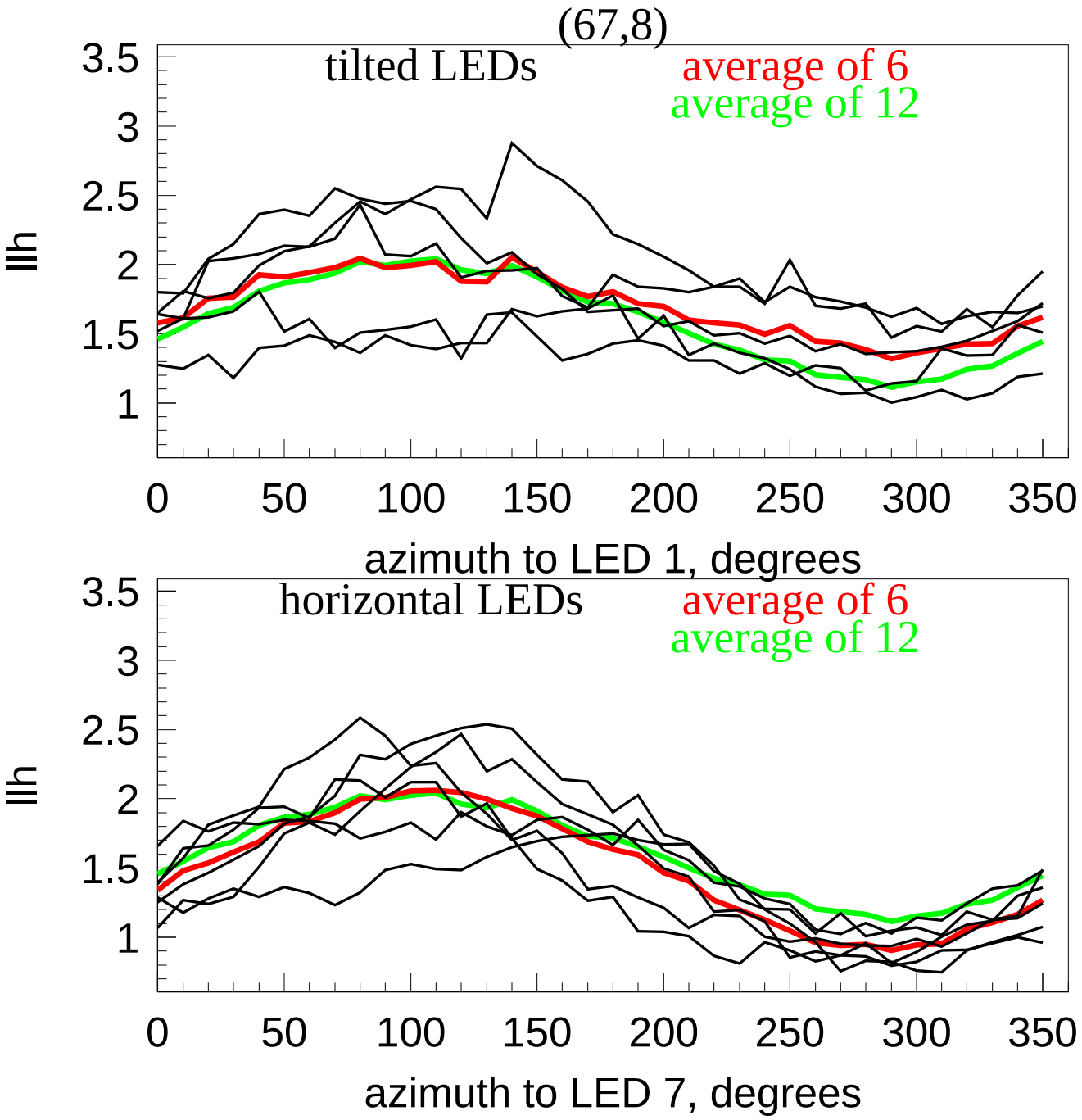

(66,15)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
9
8
3
2
10
4
200
1
7
5
6
11
12

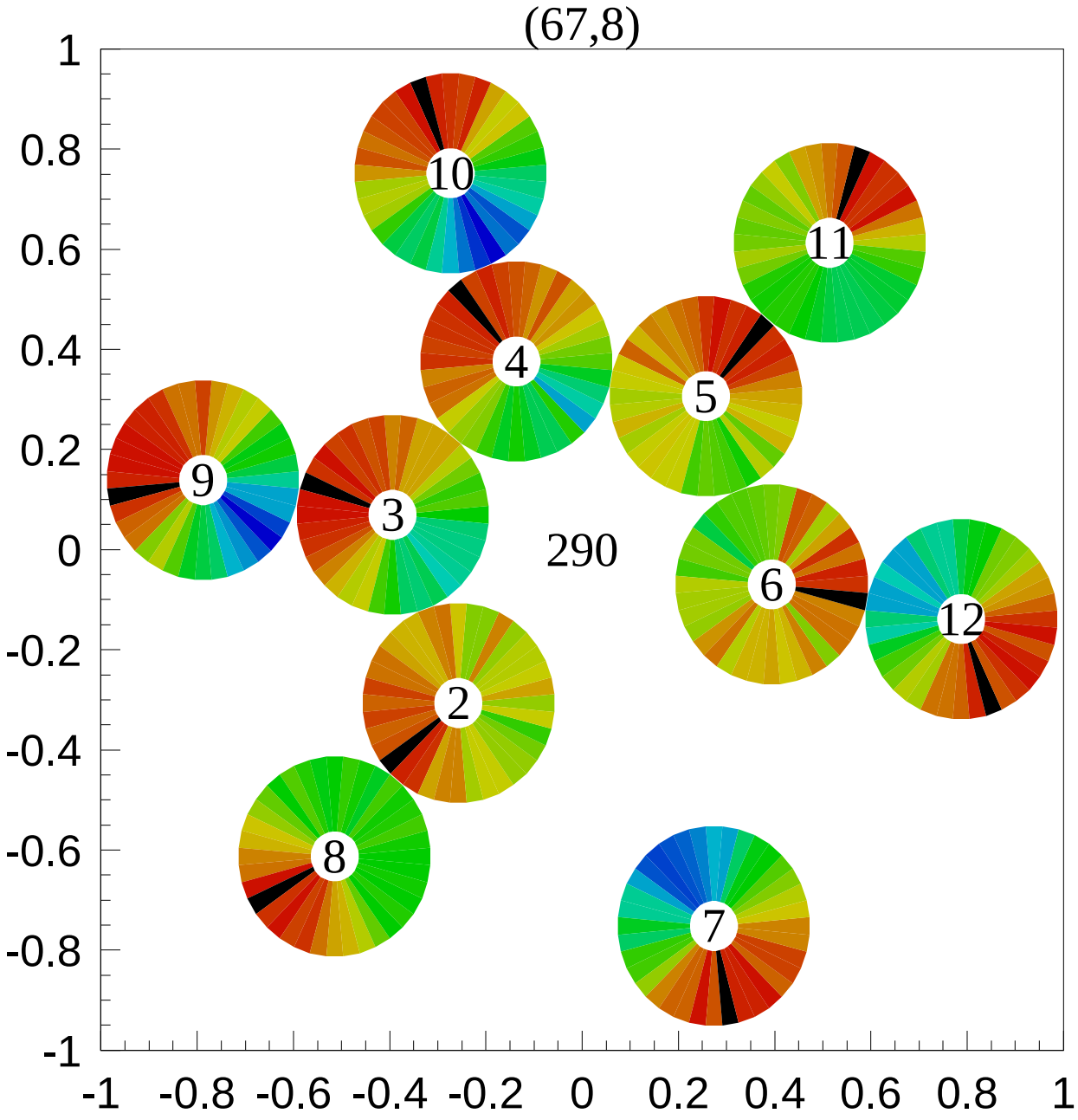

(66,41)
tilted LEDs
average of 6
average of 12
Ilh
18
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
18
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

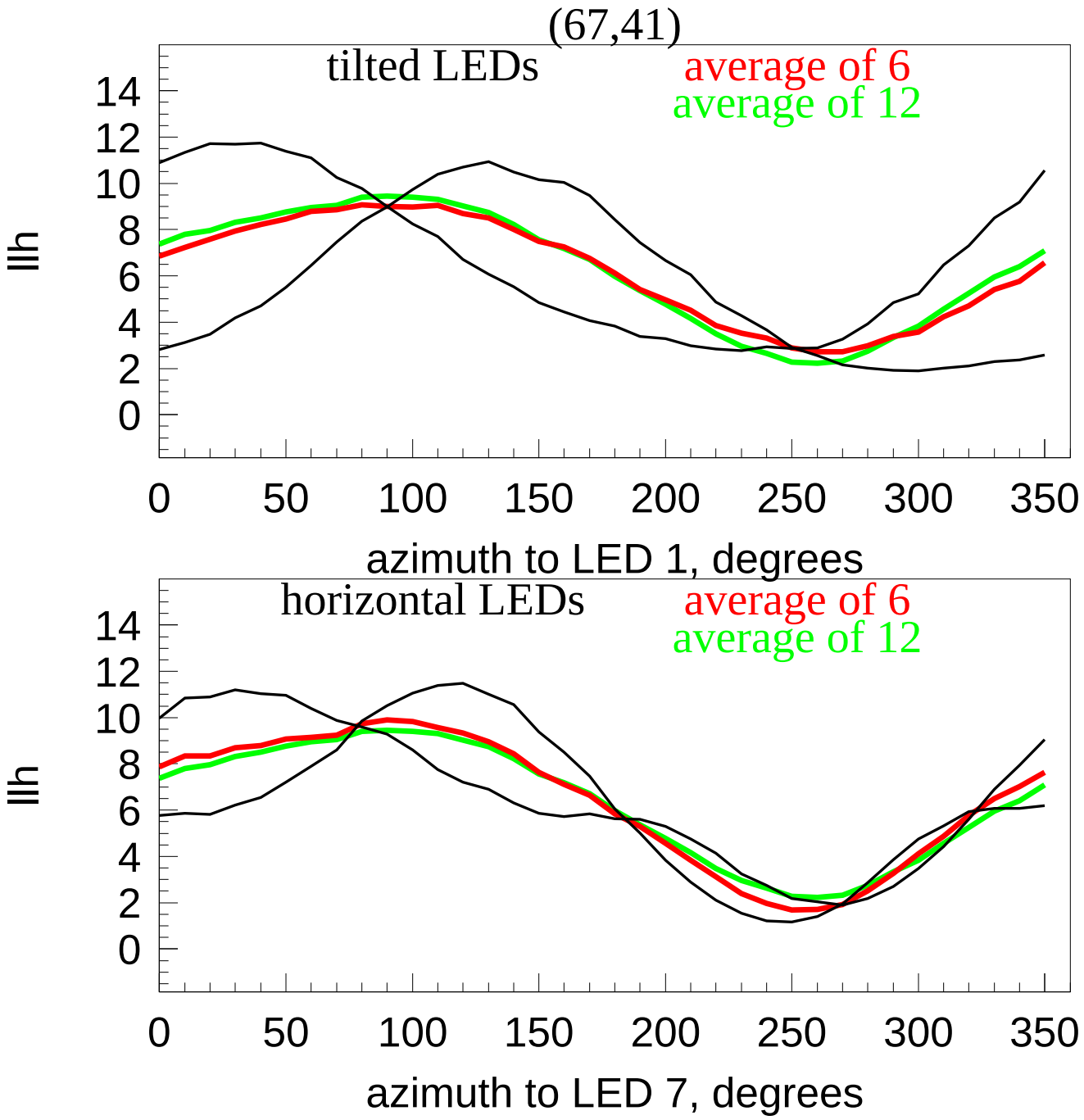

(66,41)
12
11
6
7
5
1
30
4
2
10
3
8
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

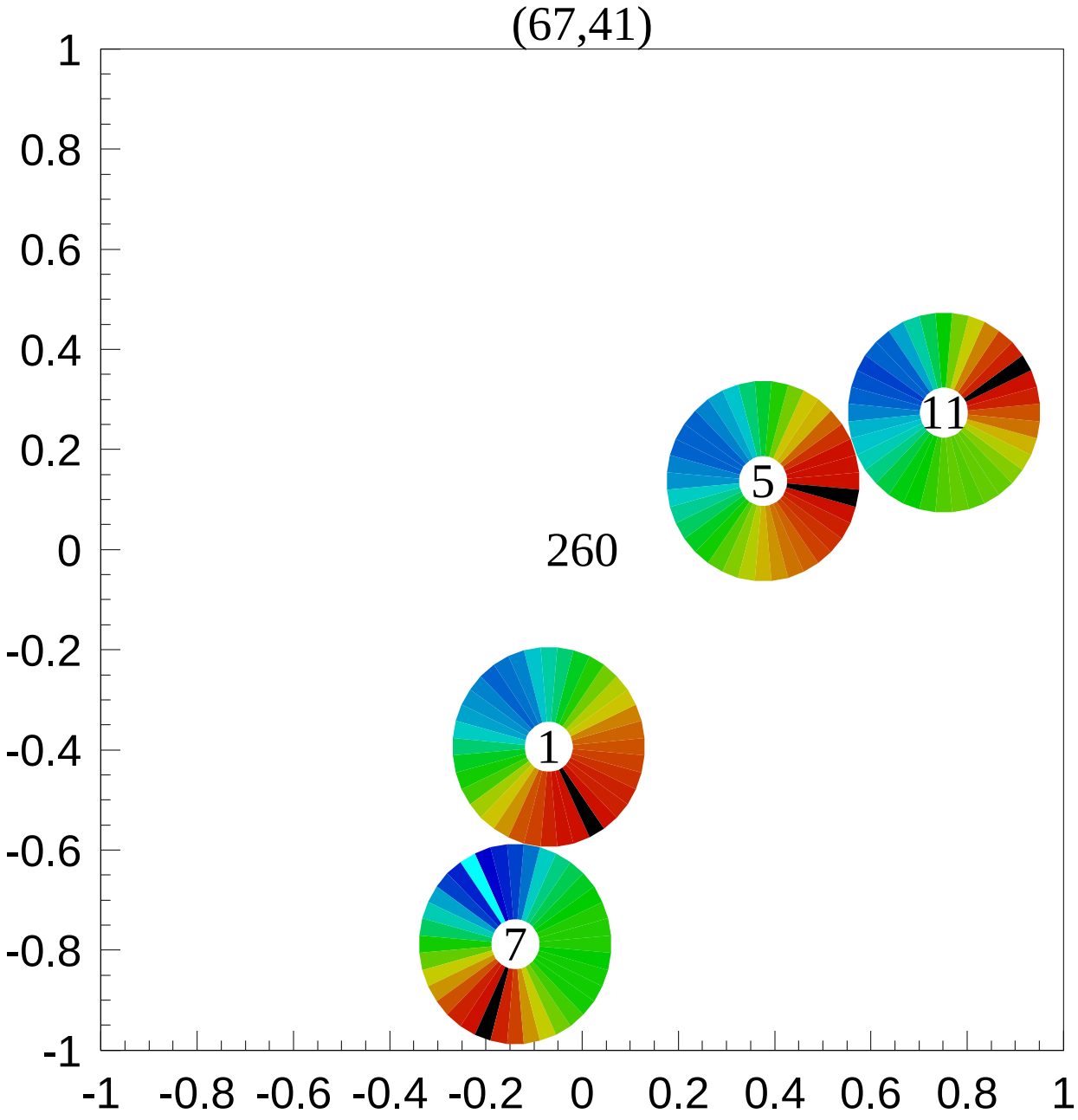

(66,43)
tilted LEDs
average of 6
average of 12
IIh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
IIh
azimuth to LED 7, degrees

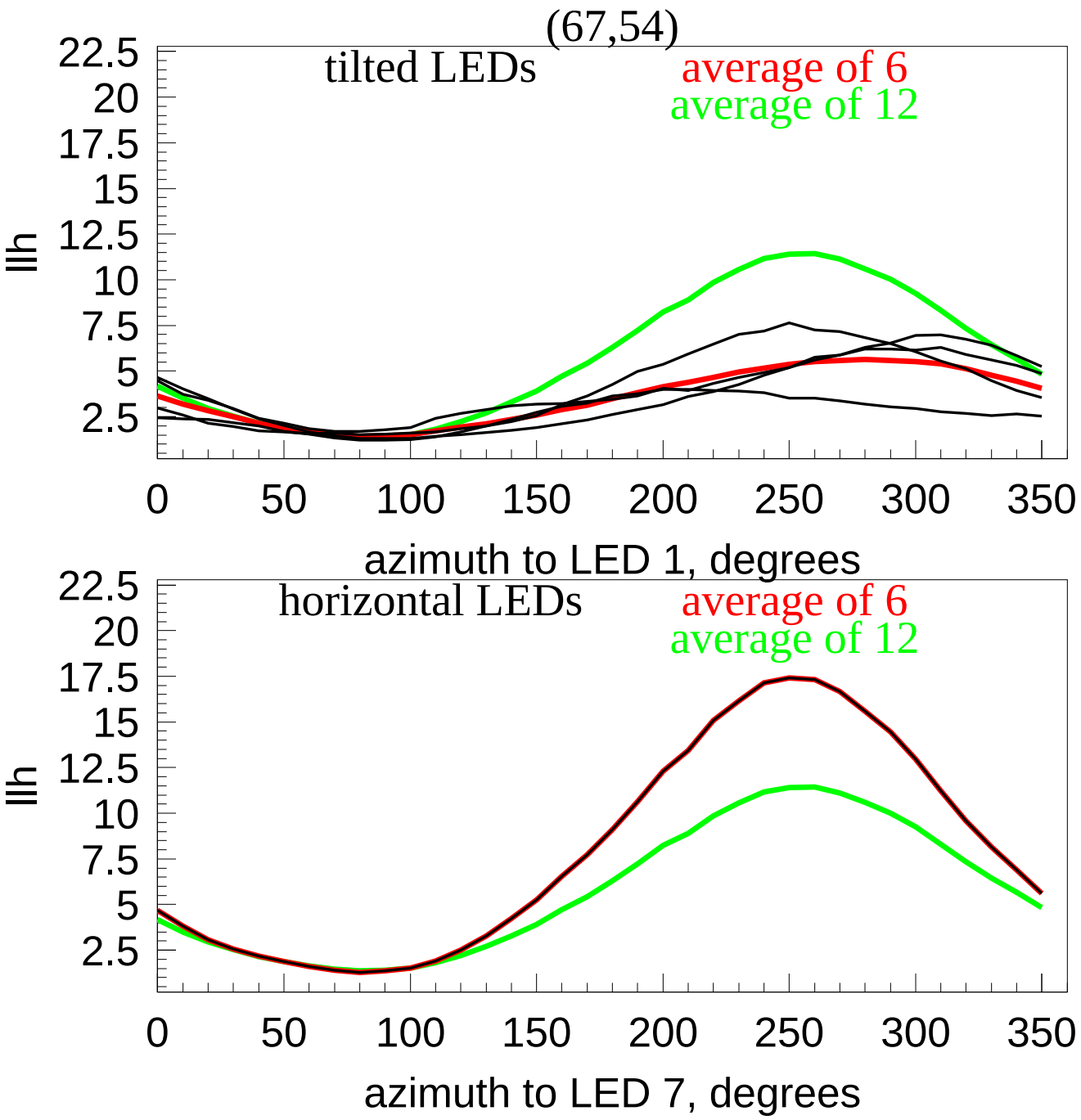

(66,43)
12
1
10
4
2
3
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

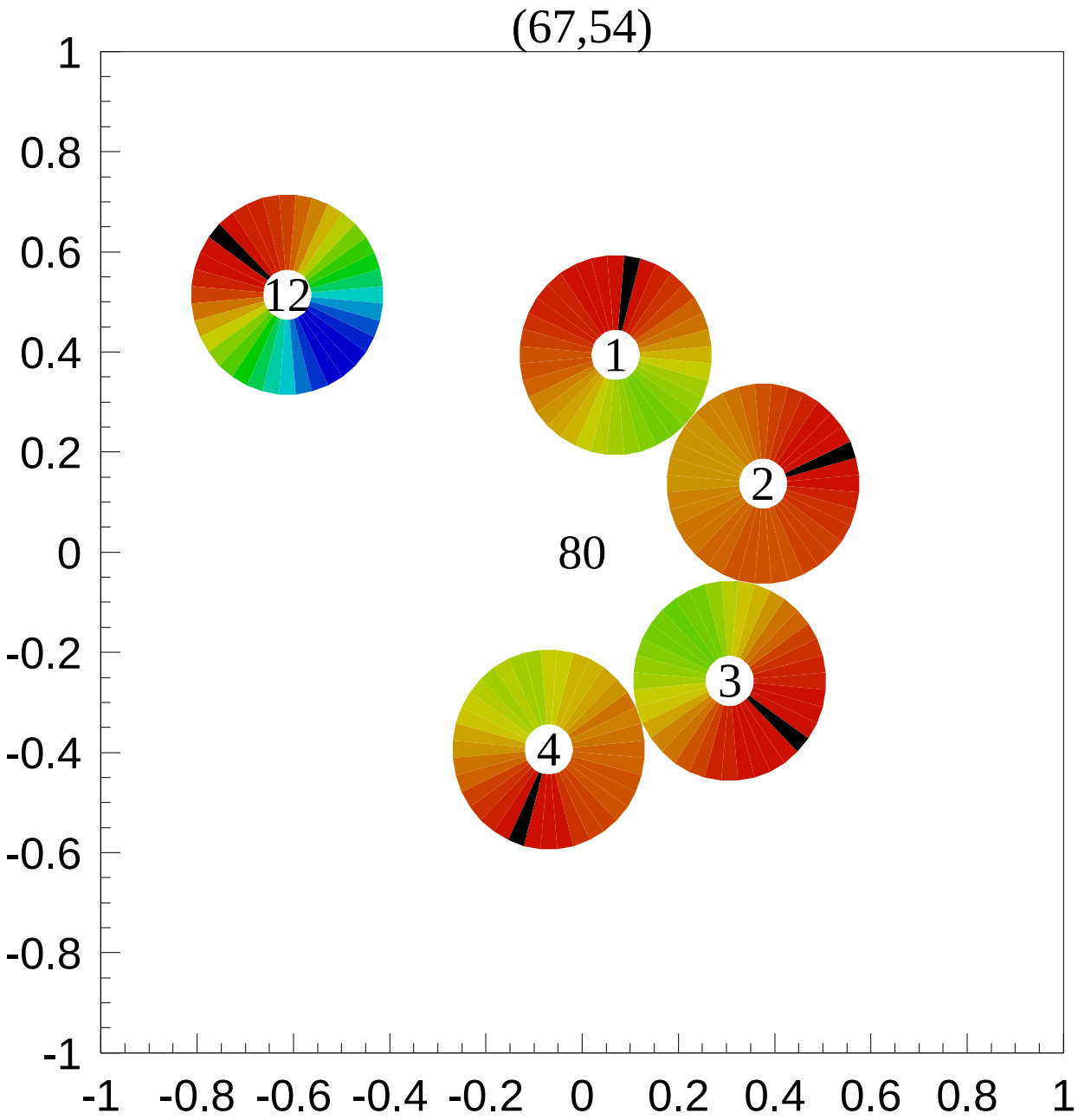

(67,8)
tilted LEDs
average of 6
average of 12
Ilh
3.5
3
2.5
2
1.5
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
3.5
3
2.5
2
1.5
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

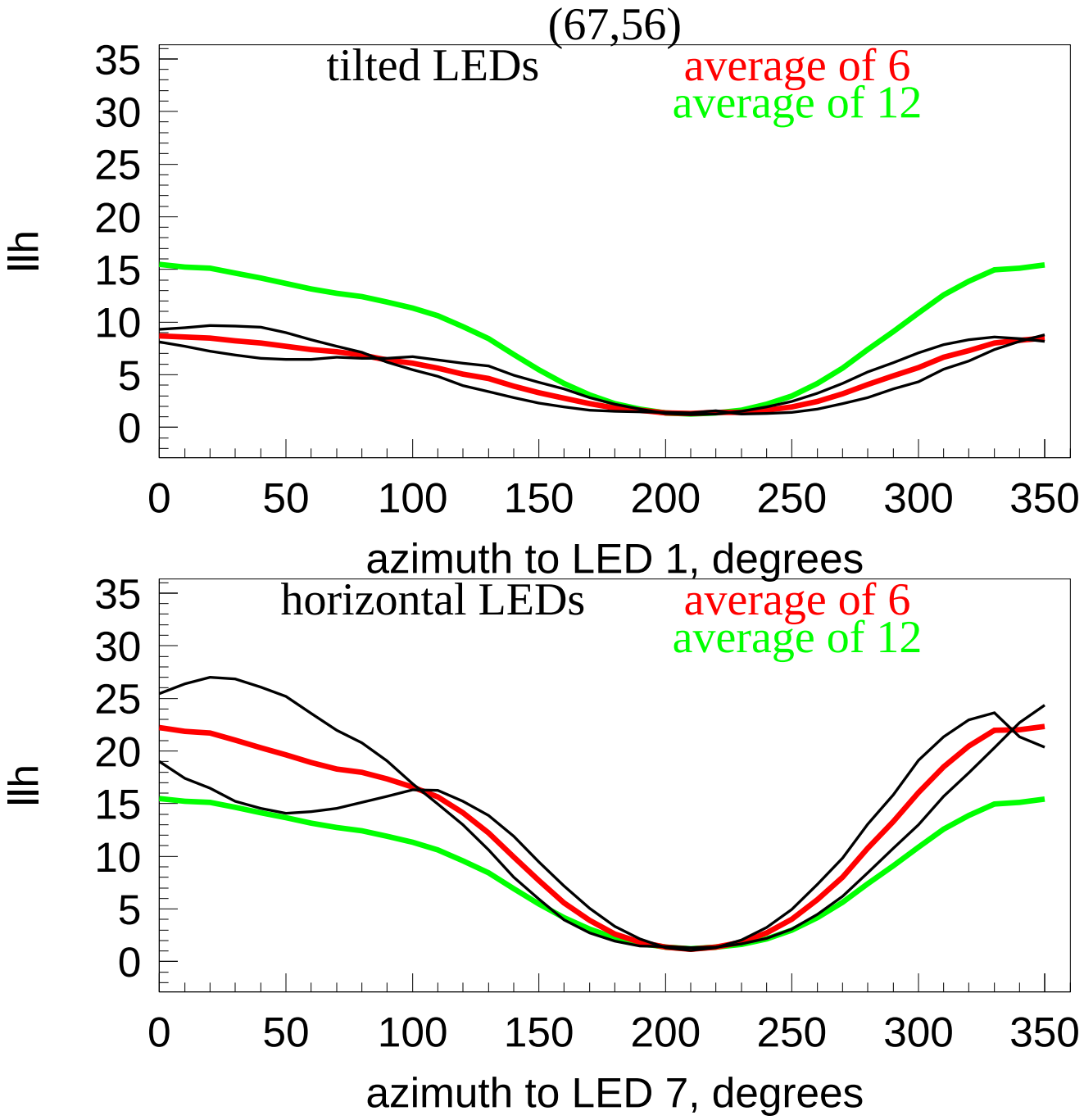

(67,8)
290
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
11
4
5
9
3
6
12
2
8
7

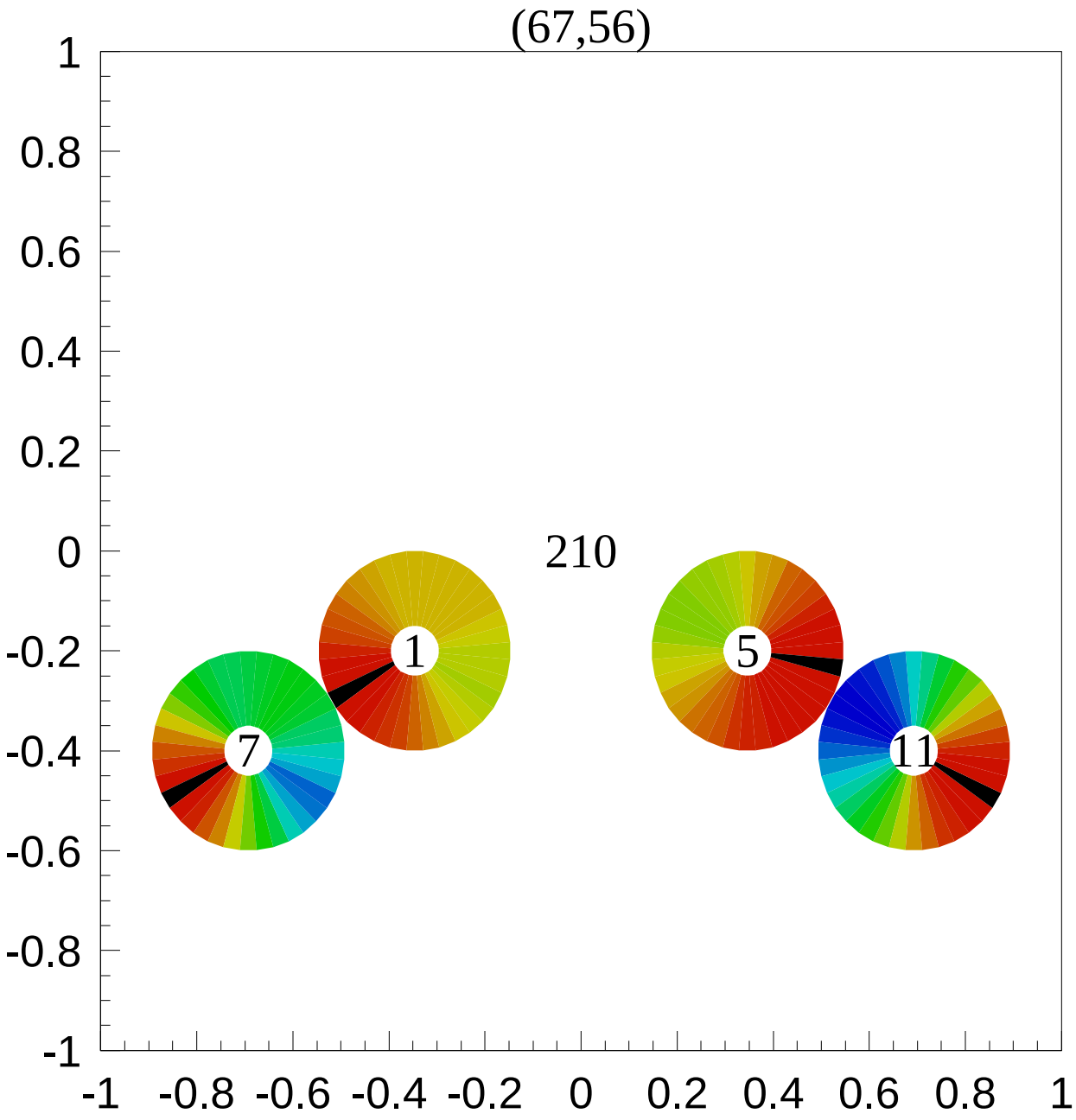

(67,41)
tilted LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

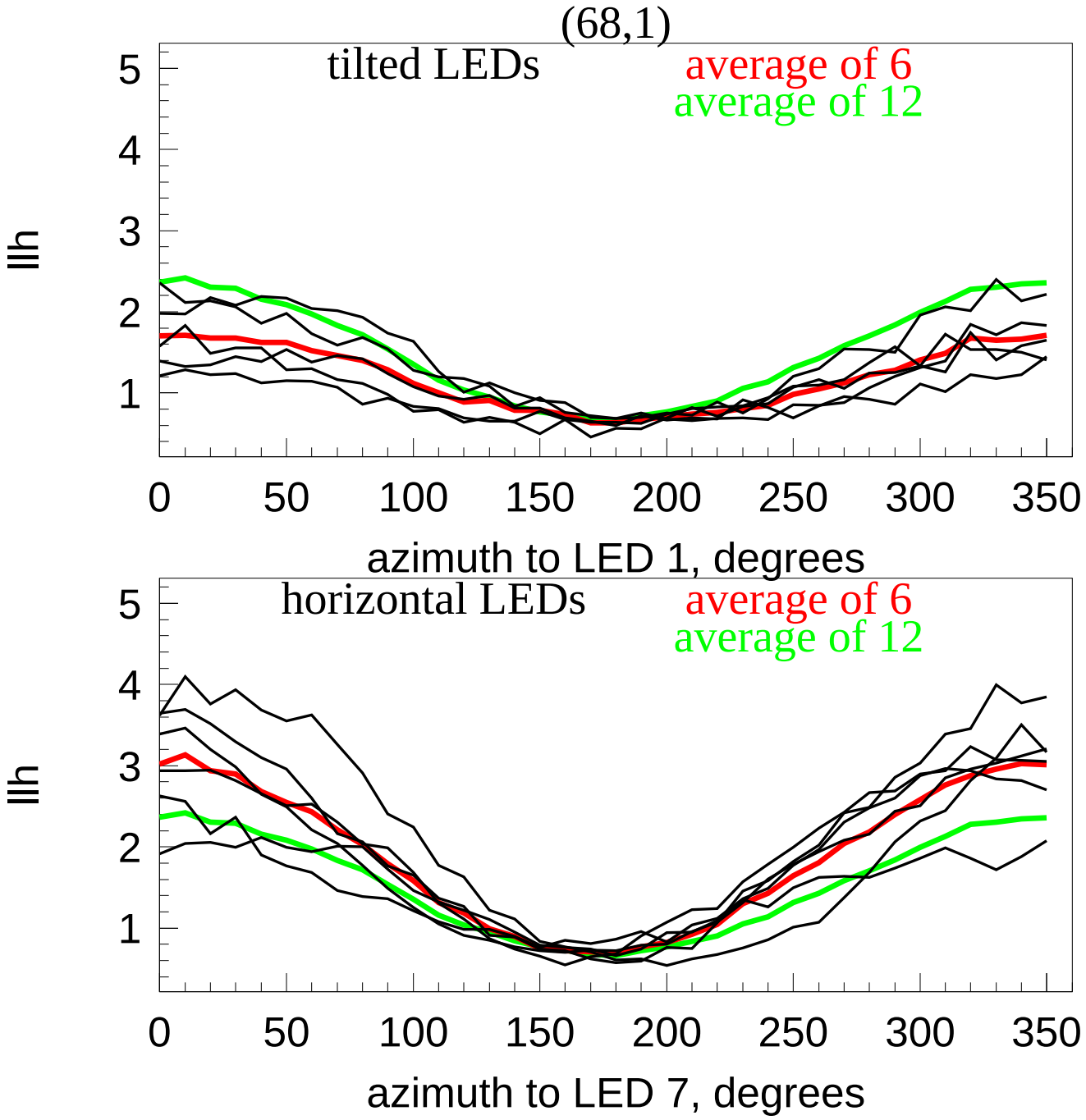

(67,41)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
260
1
7

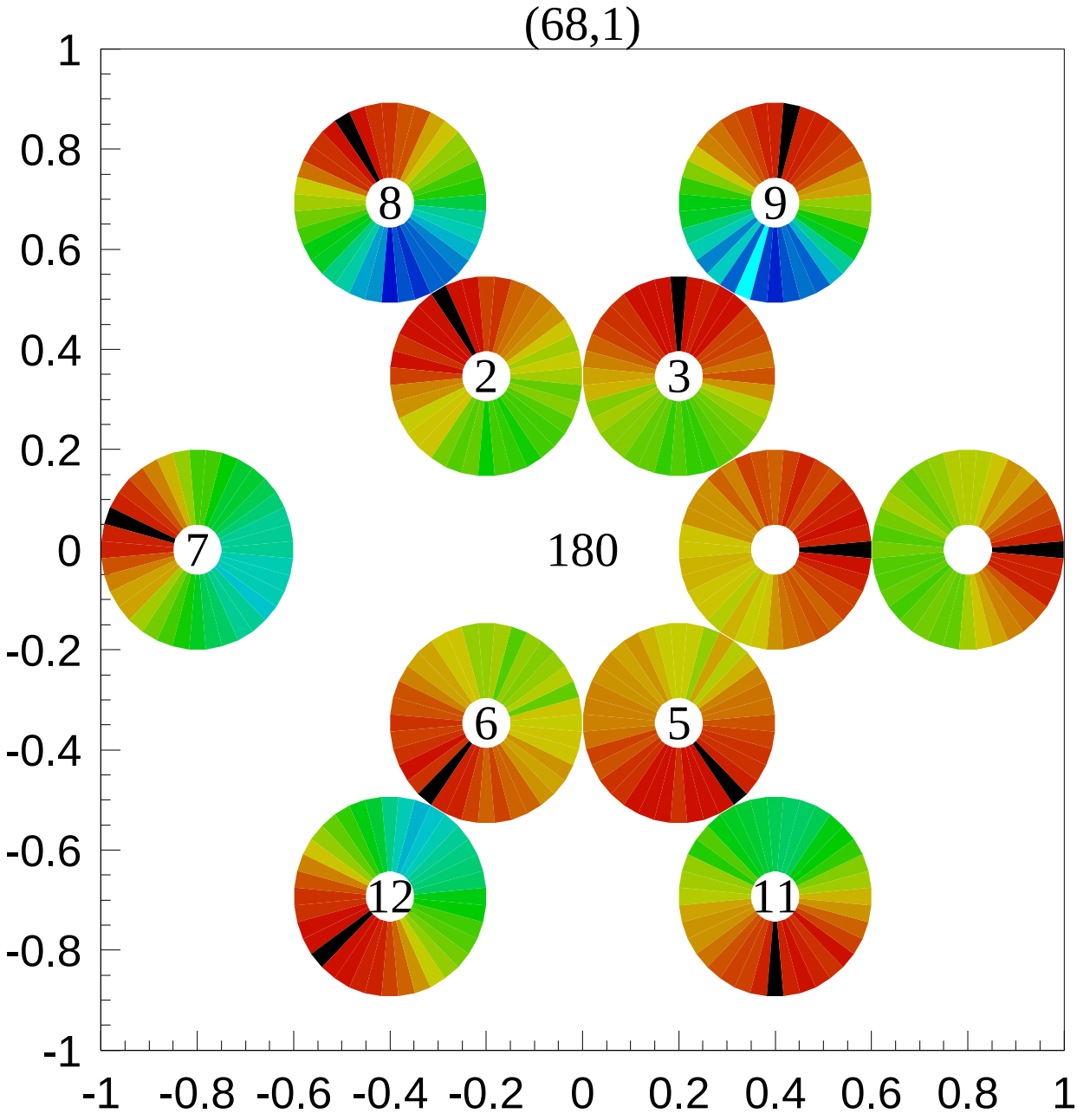

(67,54)
tilted LEDs
average of 6
average of 12
llh
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

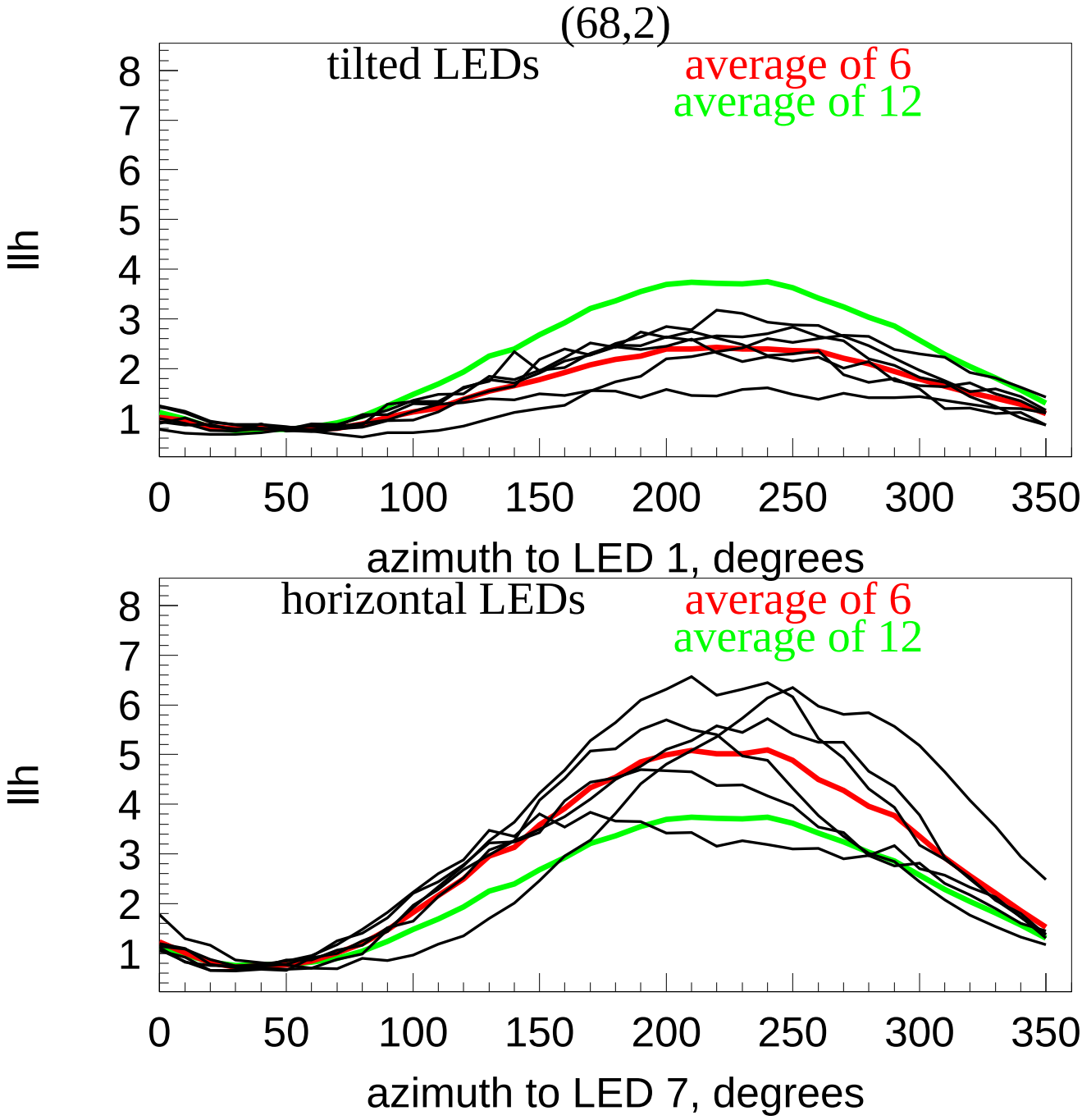

(67,54)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
1
2
80
3
4

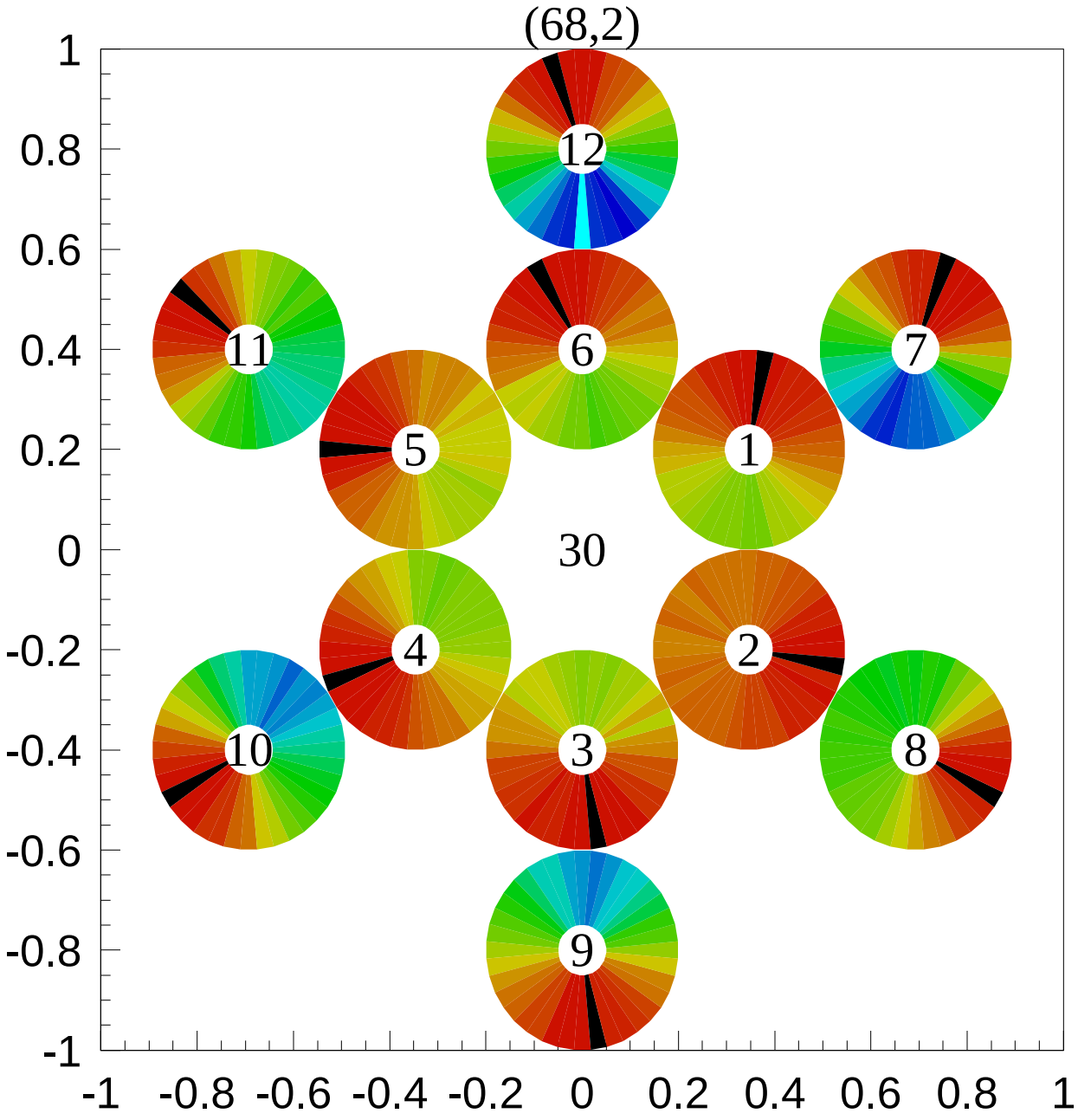

(67,56)
tilted LEDs
average of 6
average of 12
llh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

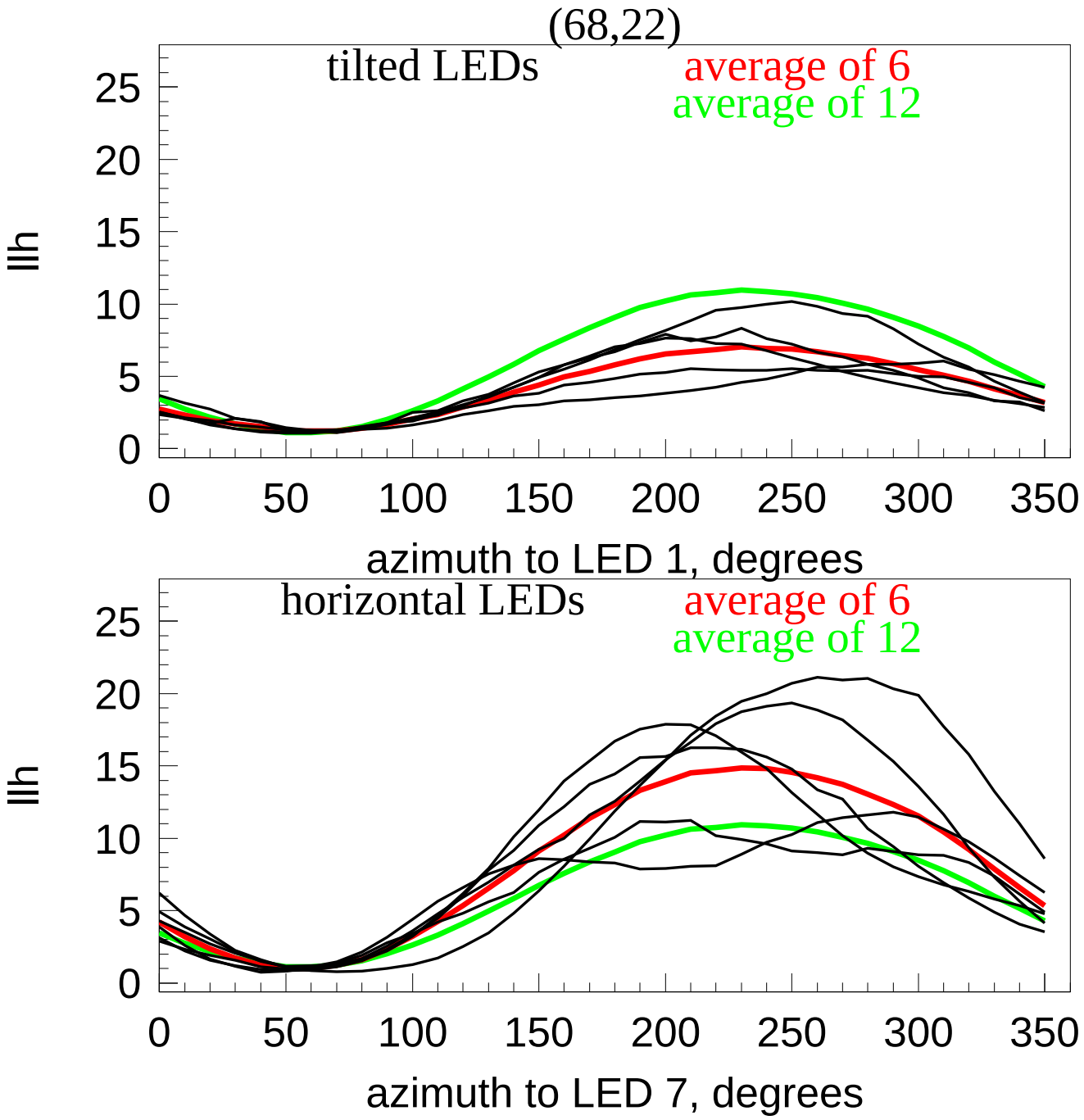

(67,56)
210
1
5
7
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

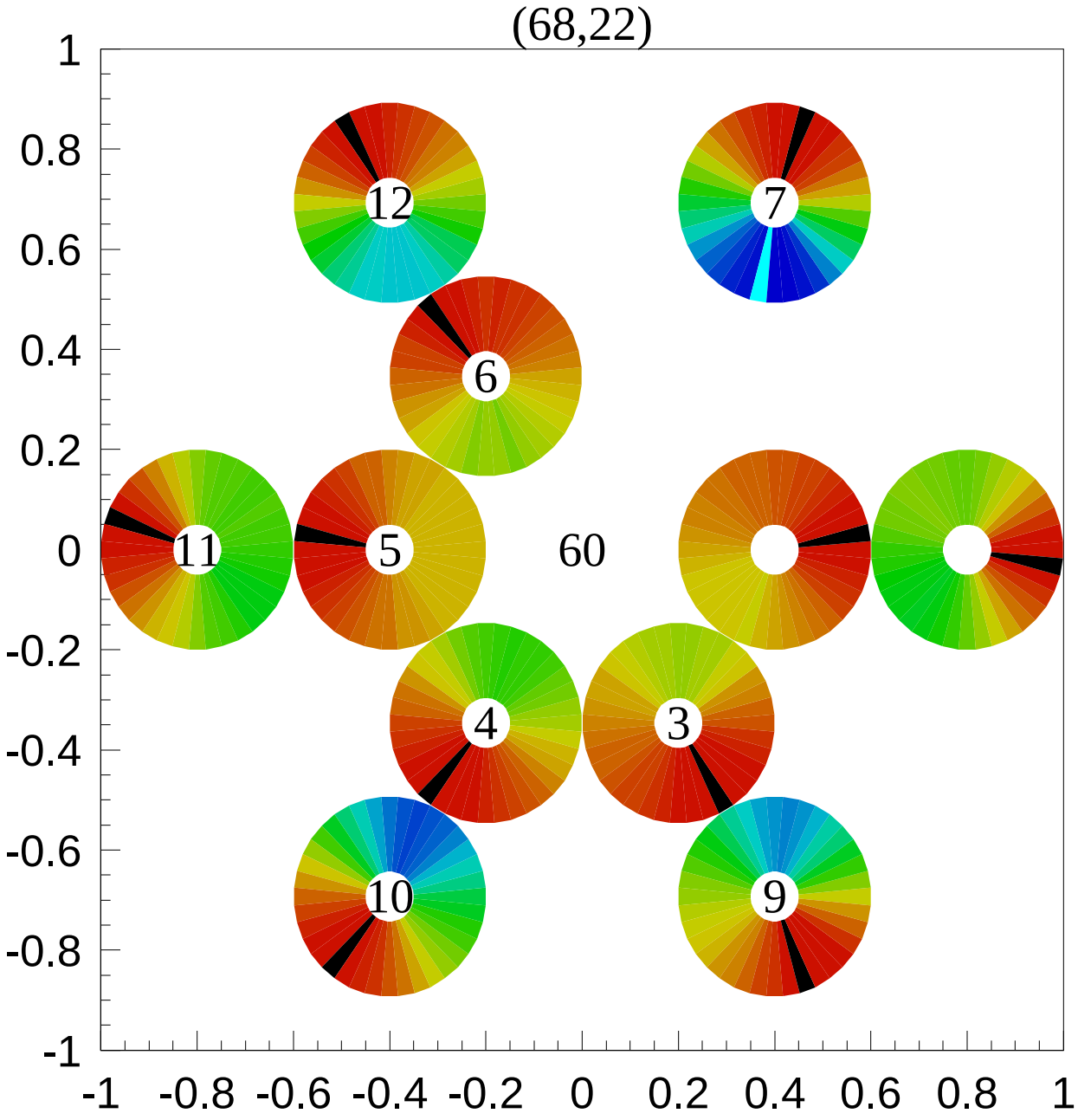

(68,1)
tilted LEDs
average of 6
average of 12
Ilh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

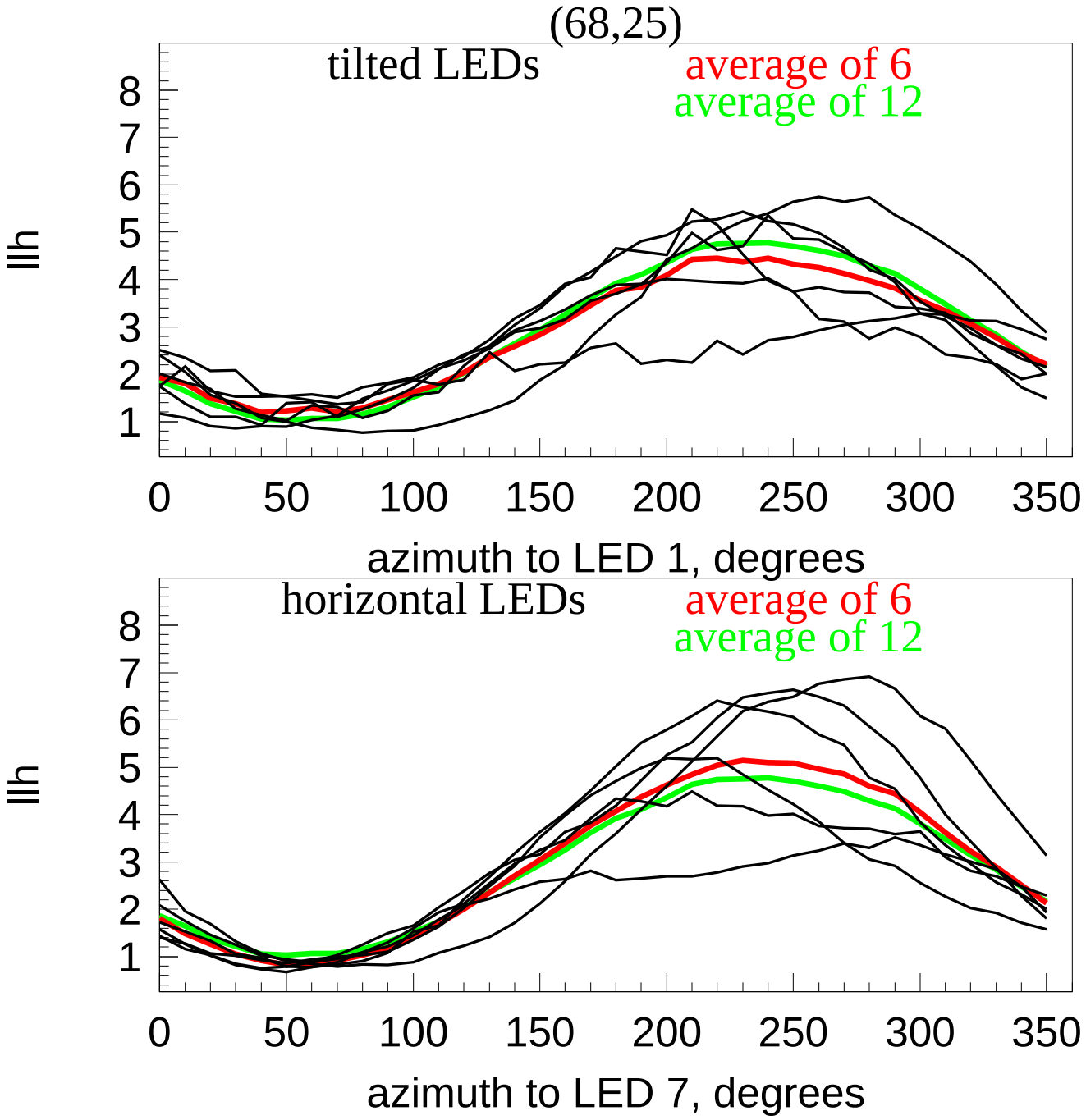

(68,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
9
2
3
7
180
6
5
12
11

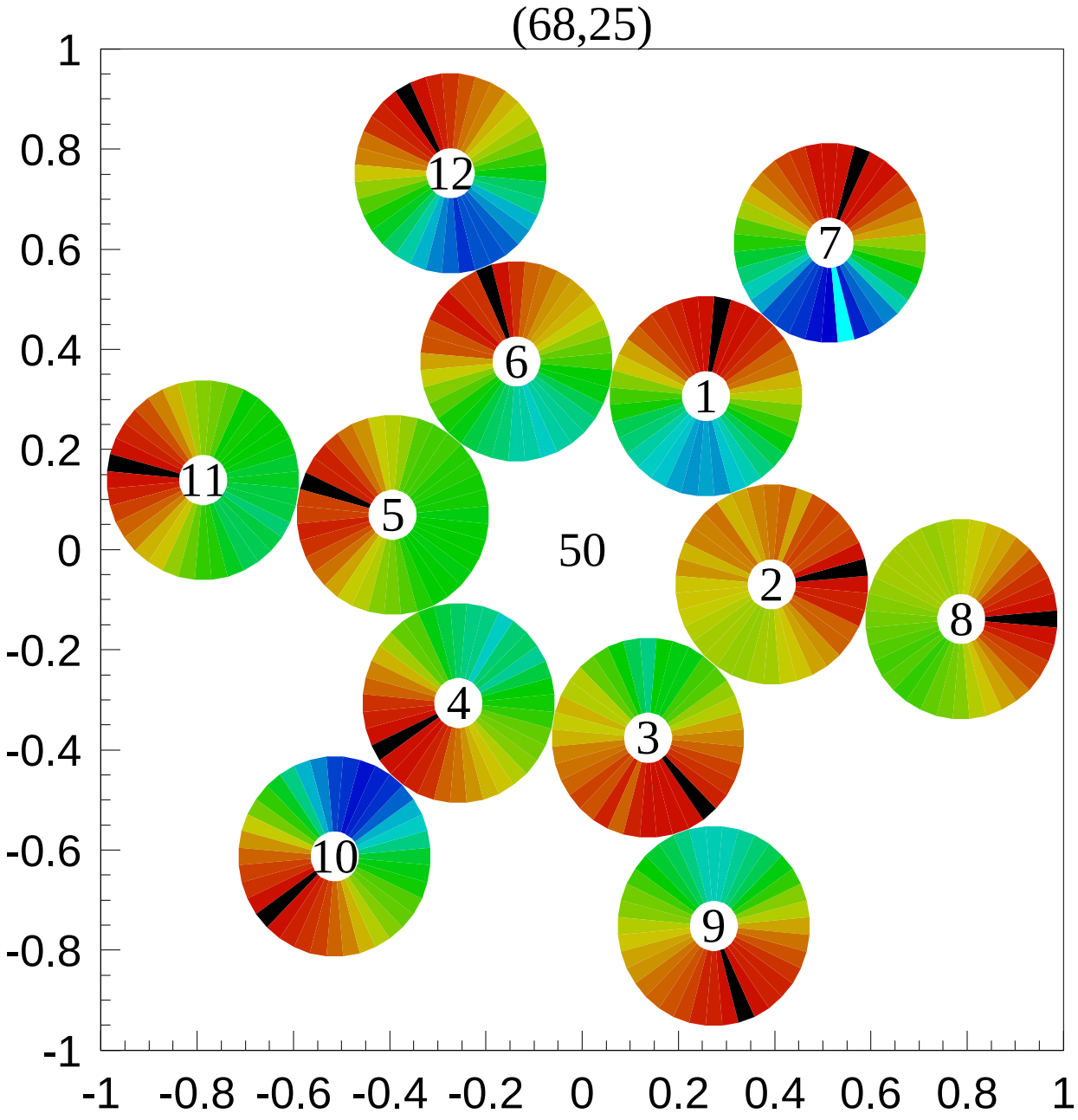

(68,2)
tilted LEDs
average of 6
average of 12
llh
8
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

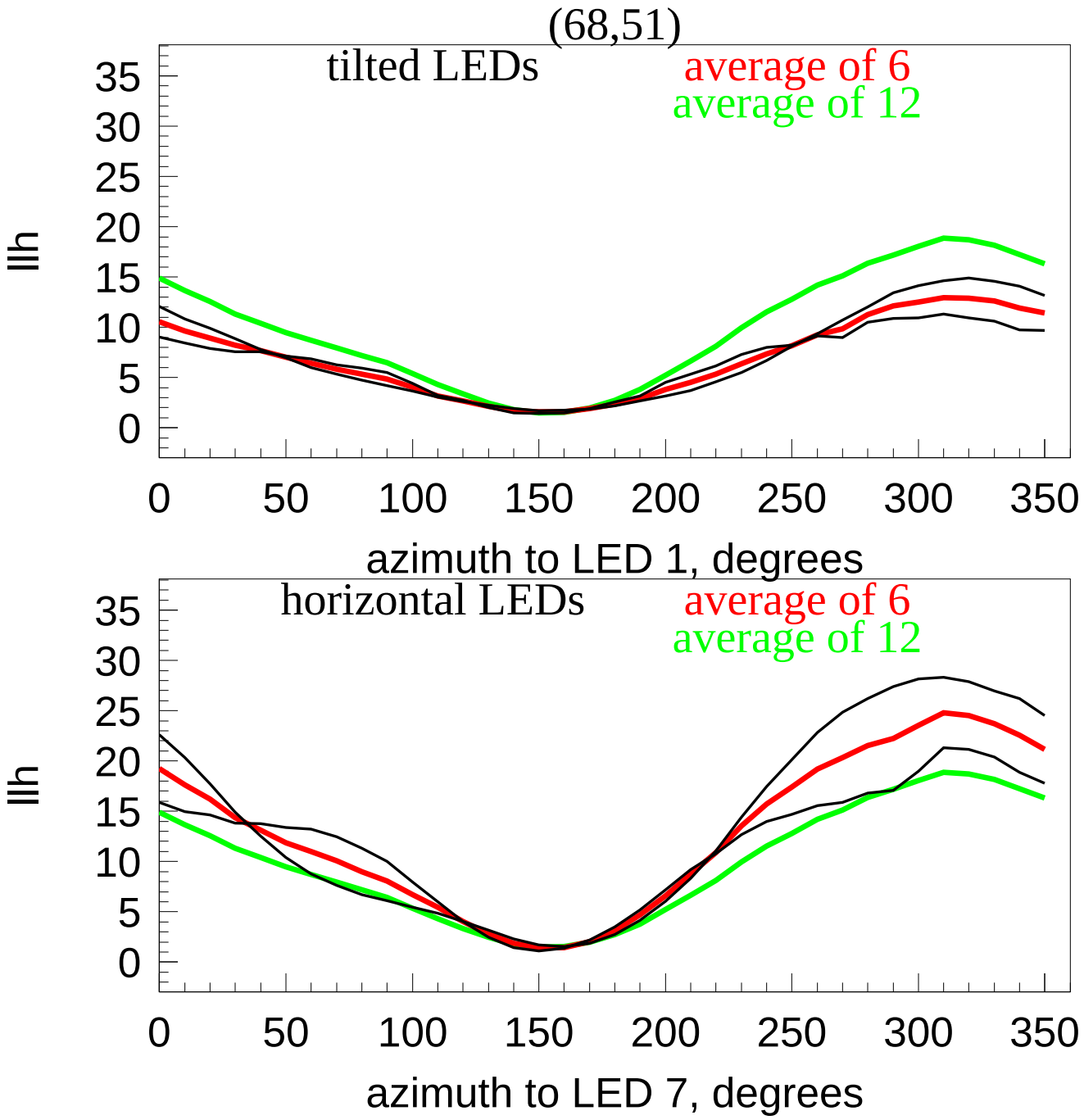

(68,2)
12
11
6
7
5
1
30
4
2
10
3
8
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

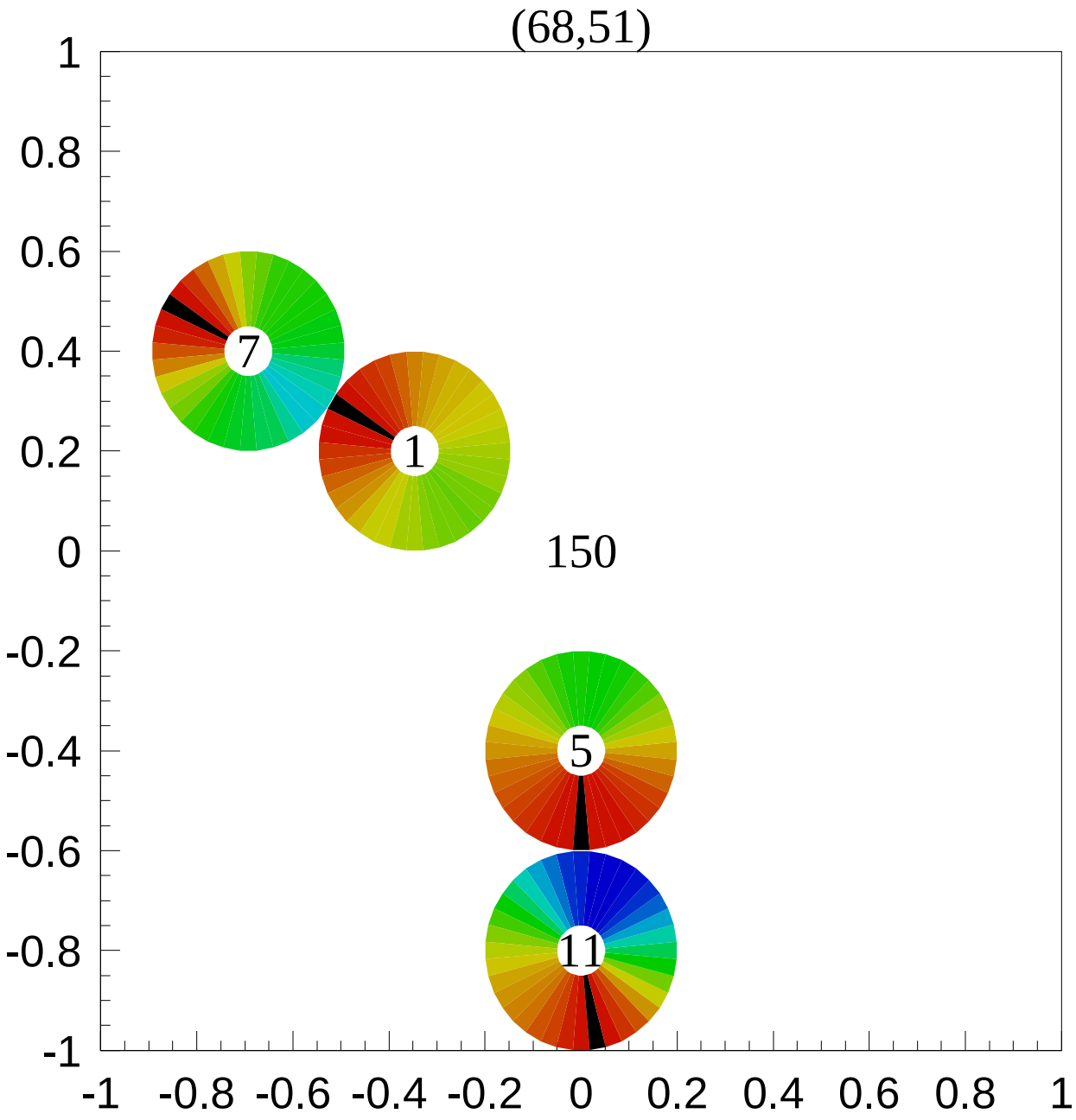

(68,22)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

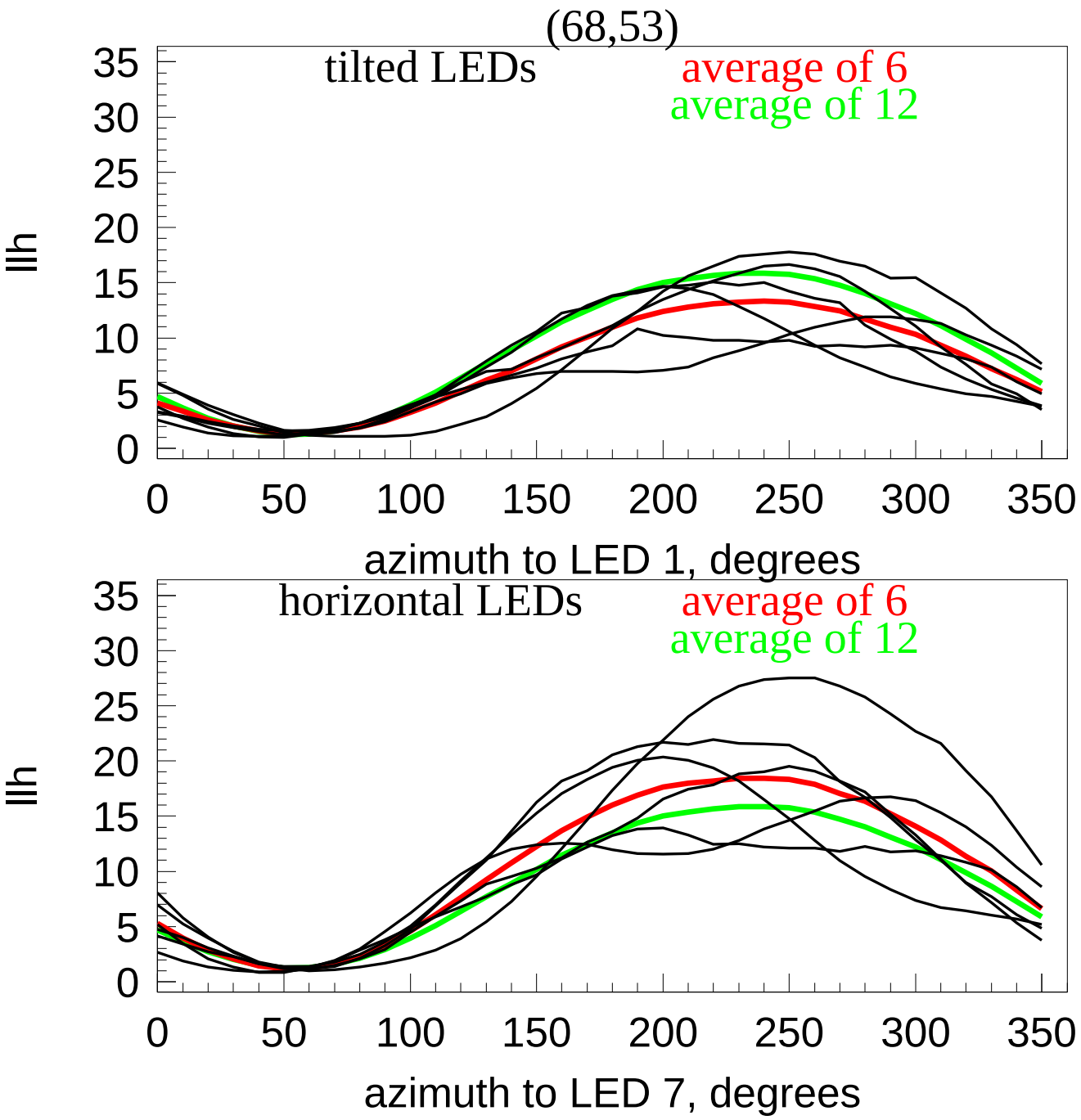

(68,22)
12
7
6
11
5
60
4
3
10
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

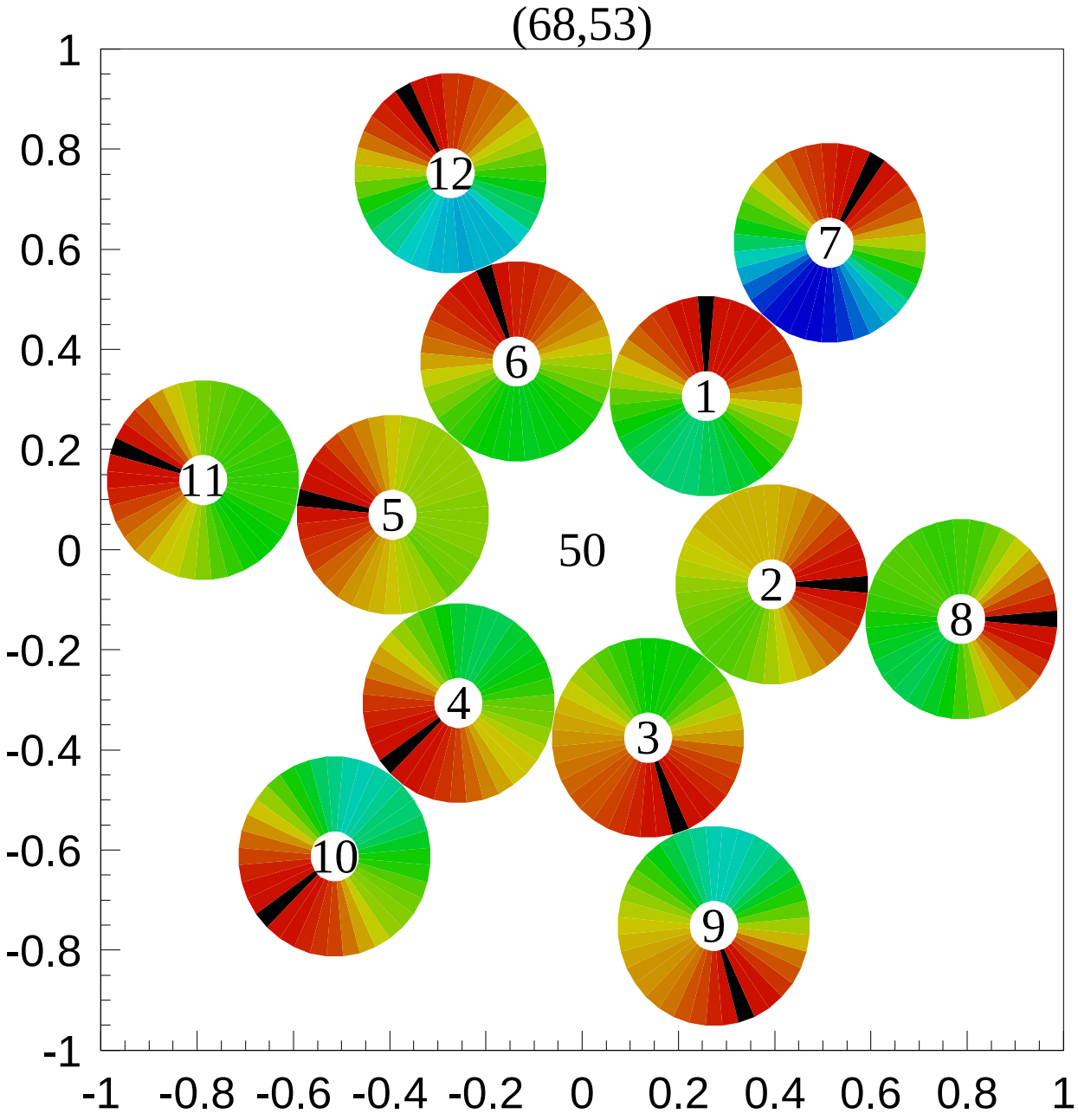

(68,25)
tilted LEDs
average of 6
average of 12
llh
8
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
8
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

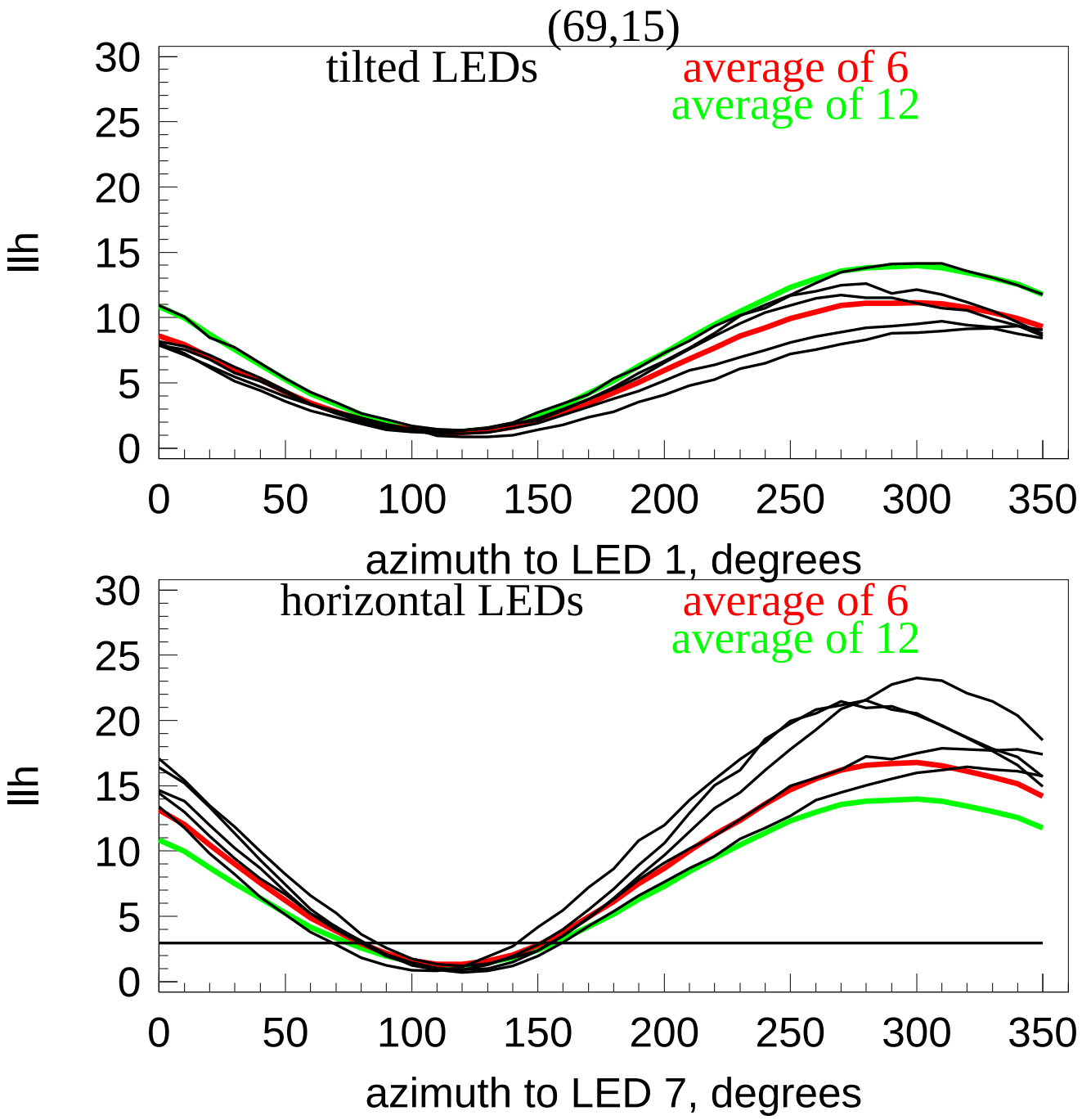

(68,25)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
7
6
1
11
5
50
2
8
4
3
10
9

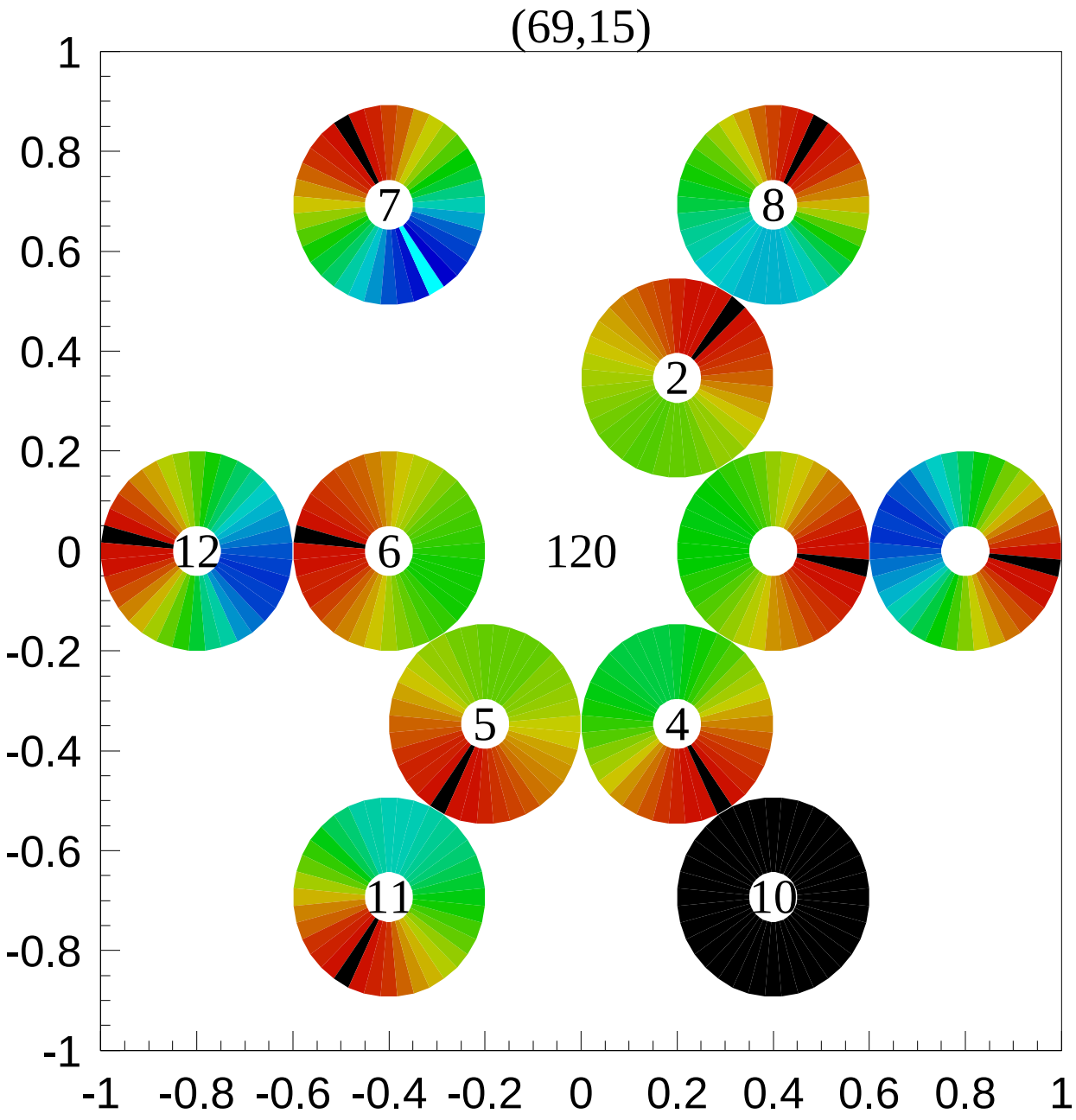

(68,51)
tilted LEDs
average of 6
average of 12
Ilh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

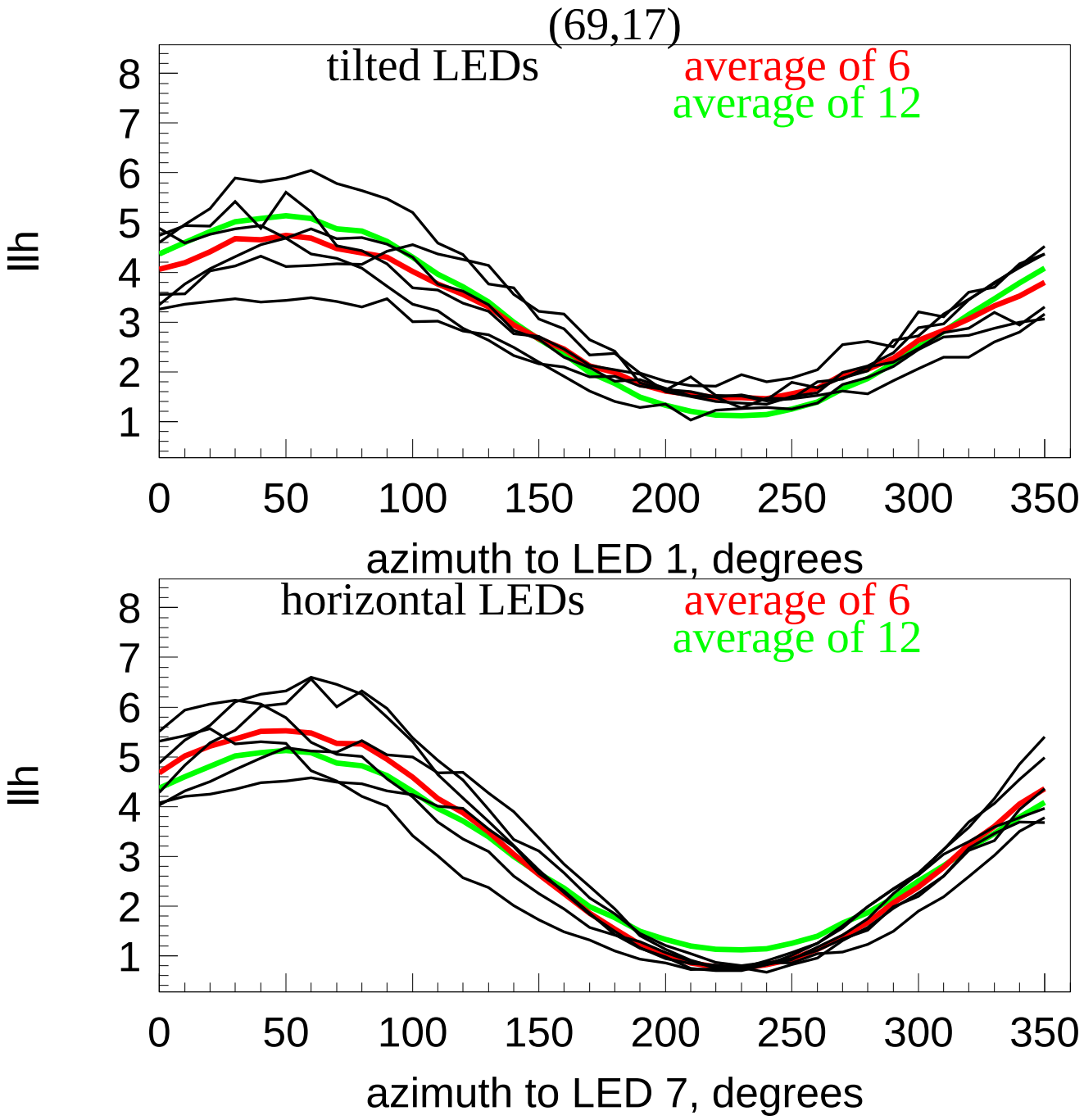

(68,51)
7
1
150
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

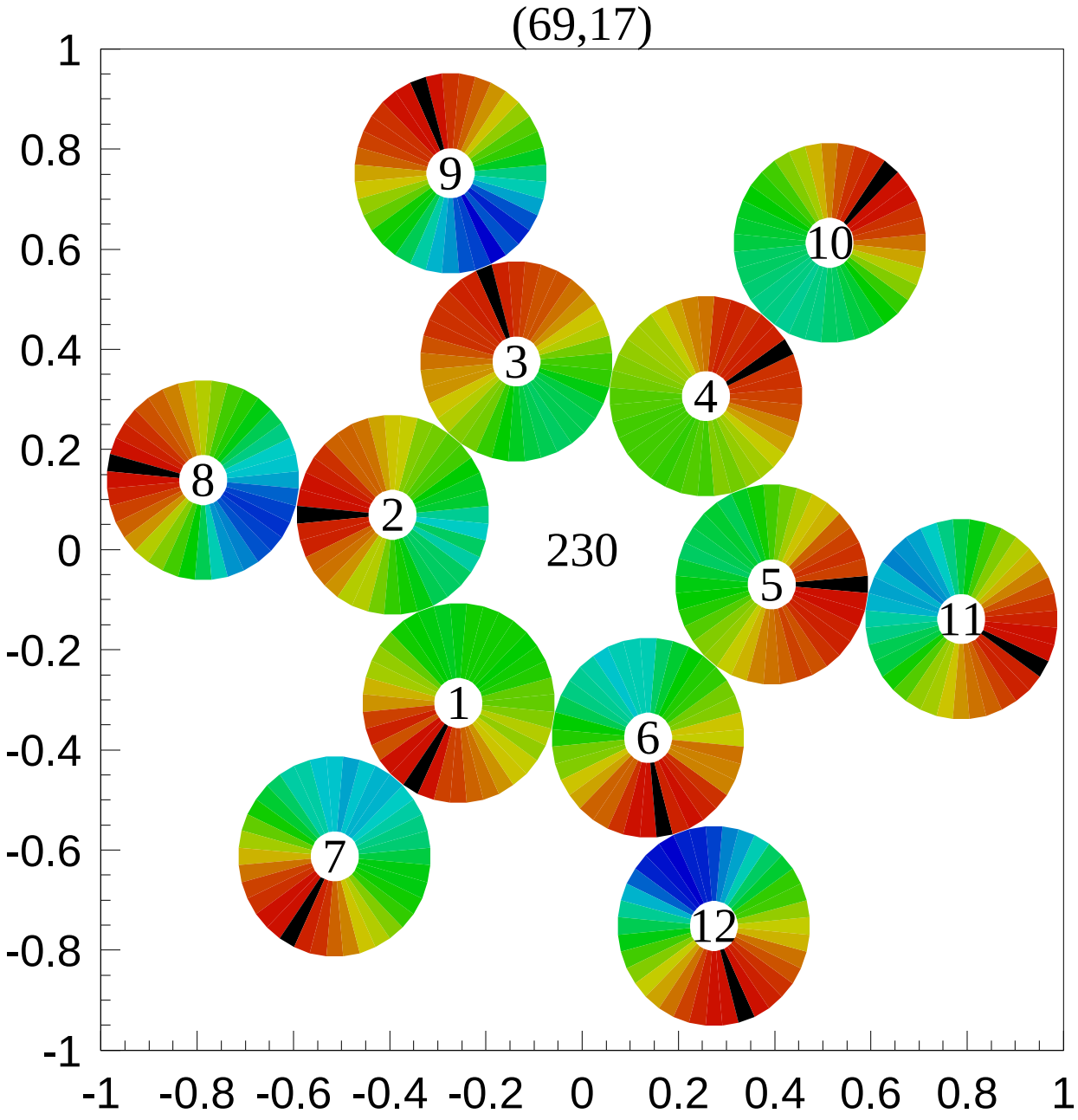

(68,53)
tilted LEDs
average of 6
average of 12
llh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

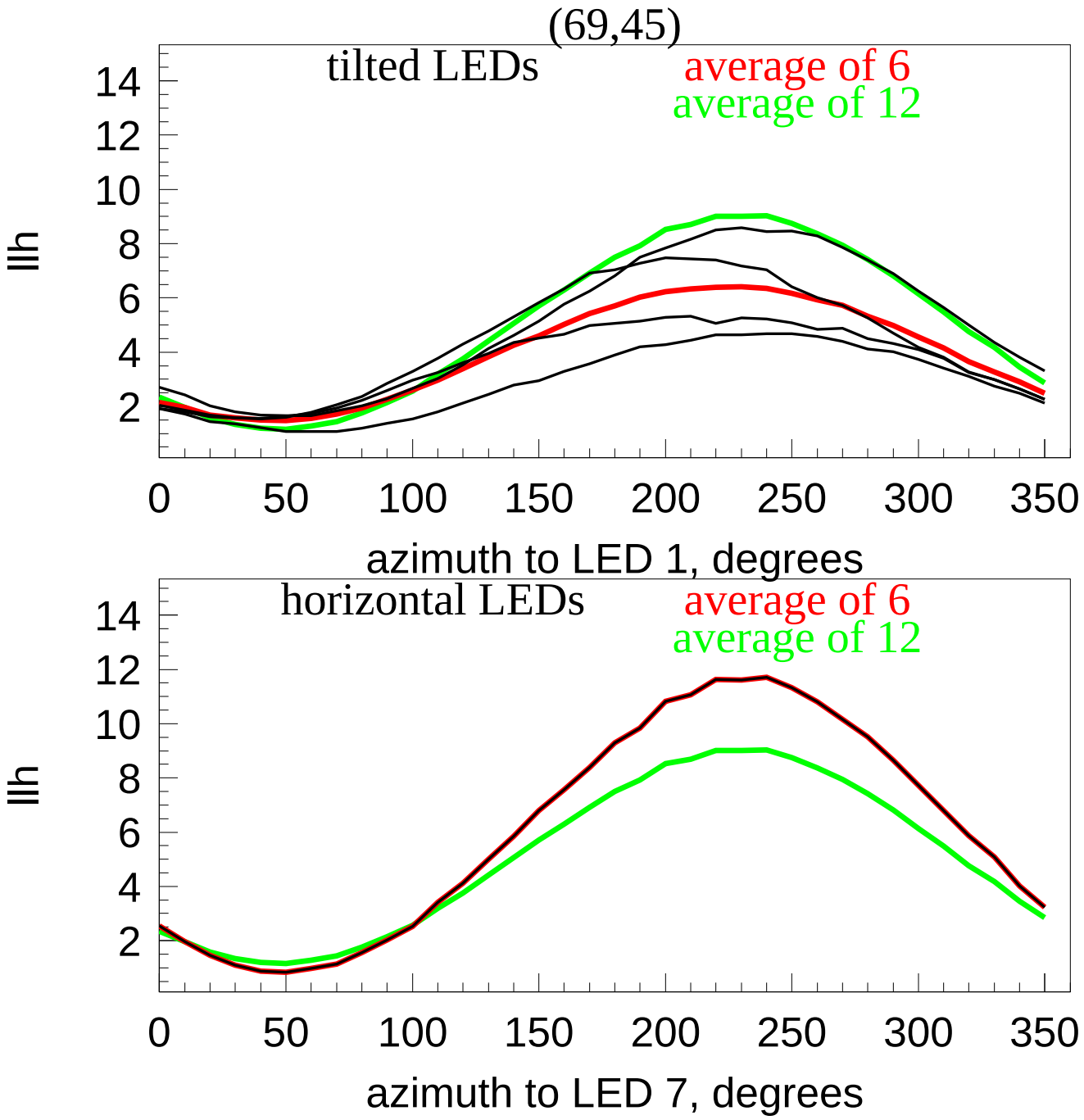

(68,53)
12
7
6
1
11
5
50
2
8
4
3
10
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

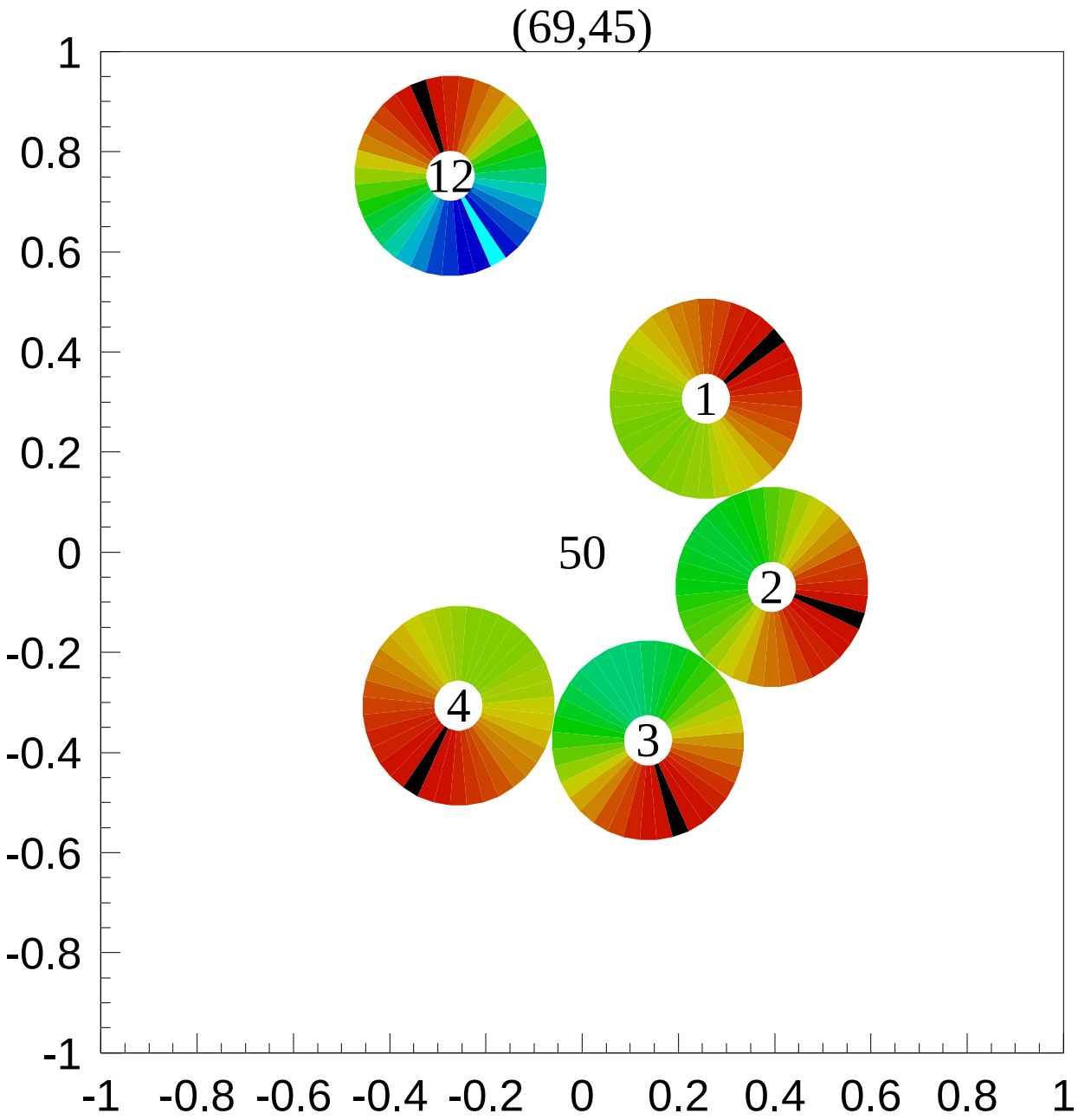

(69,15)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

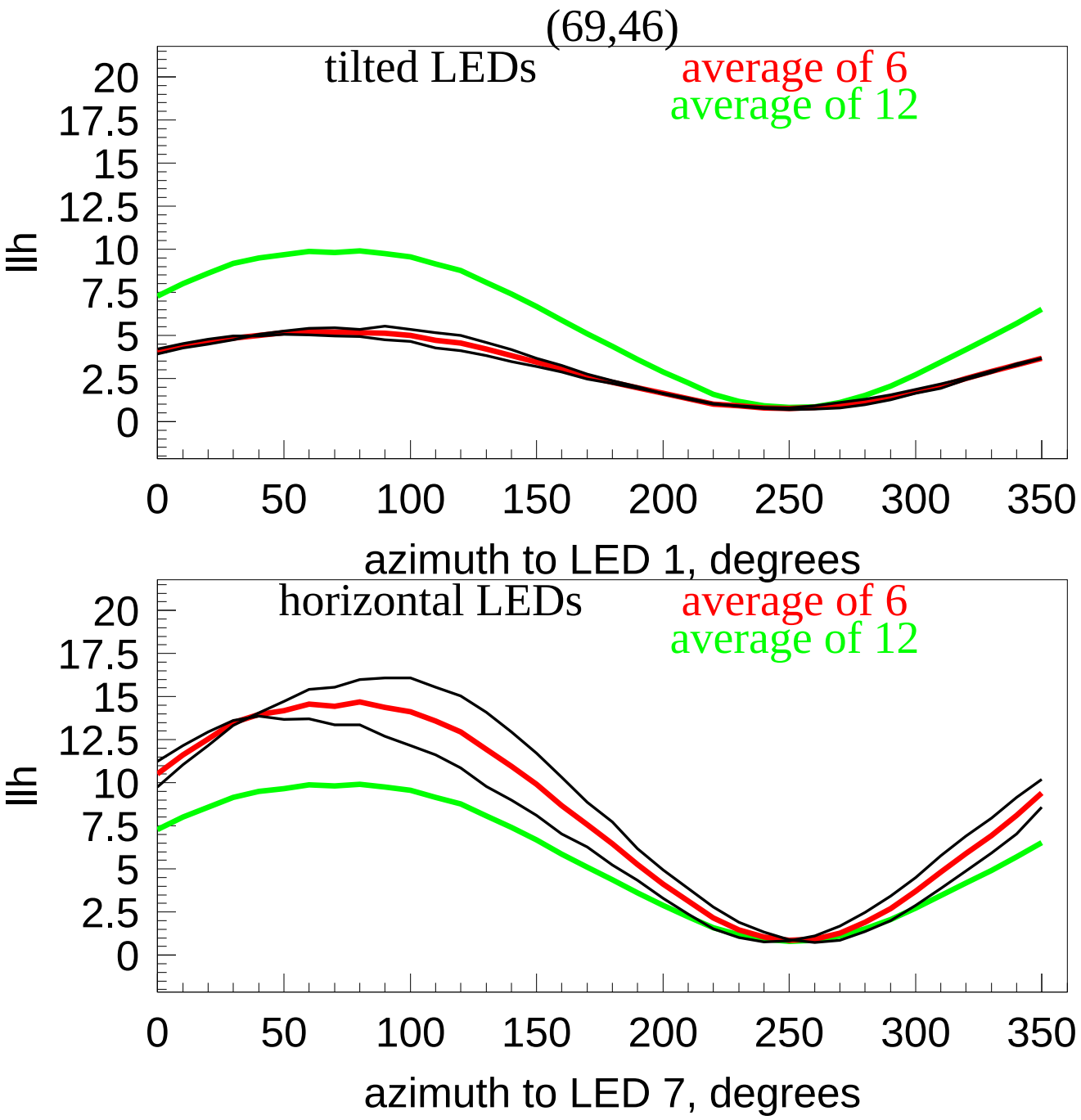

(69,15)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
8
2
12
6
120
5
4
11
10

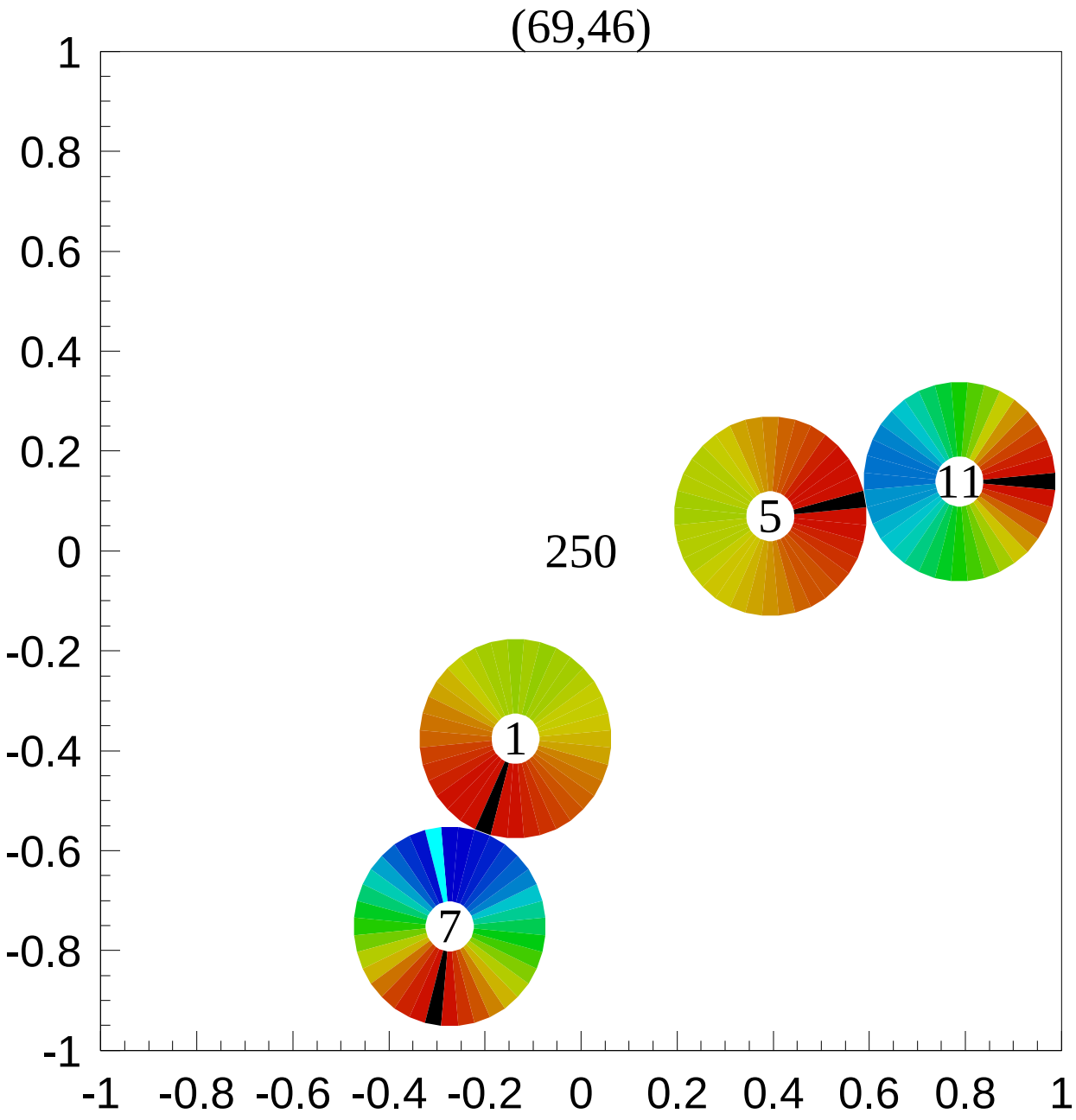

(69,17)
tilted LEDs
average of 6
average of 12
llh
8
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

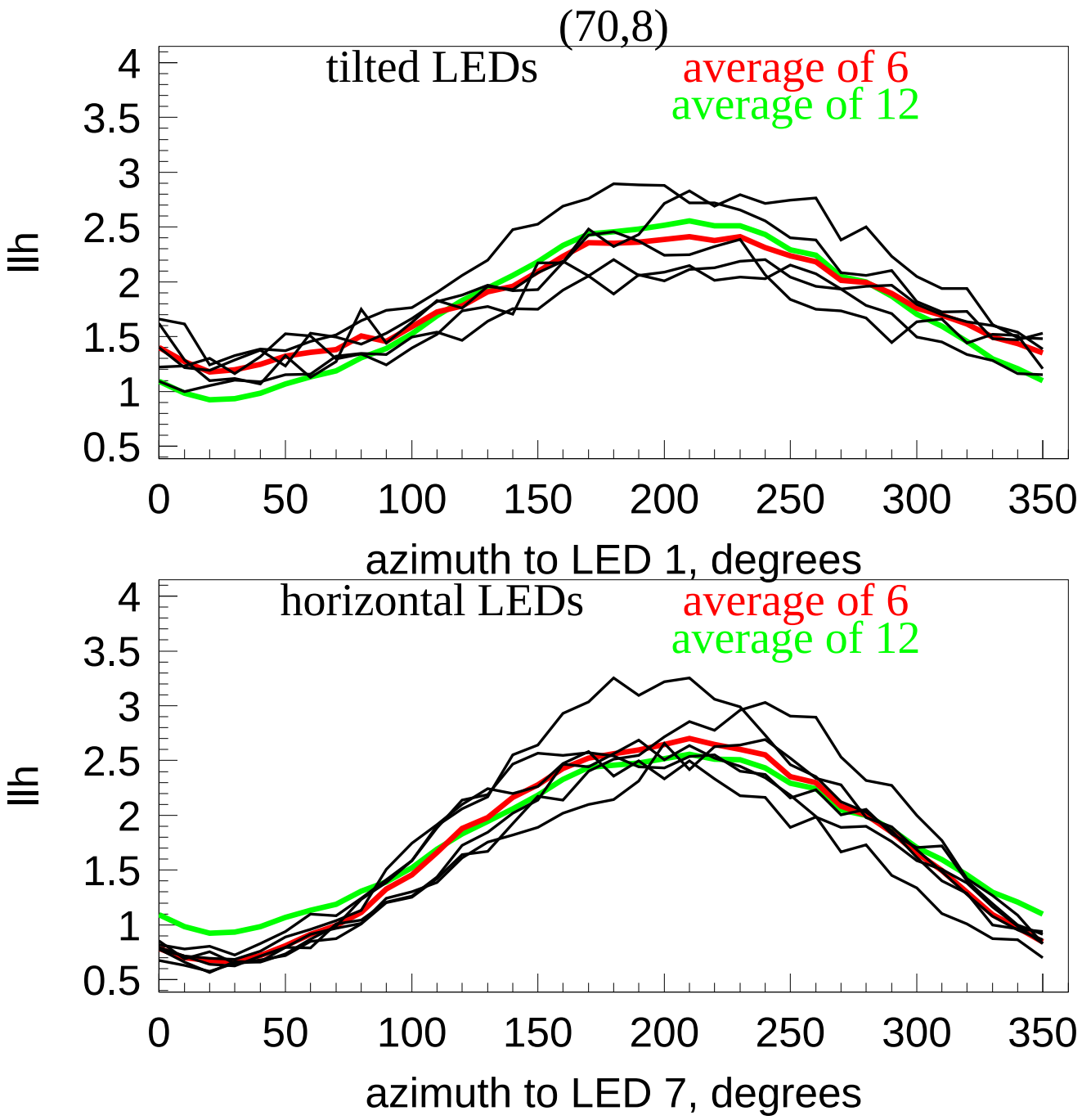

(69,17)
230
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

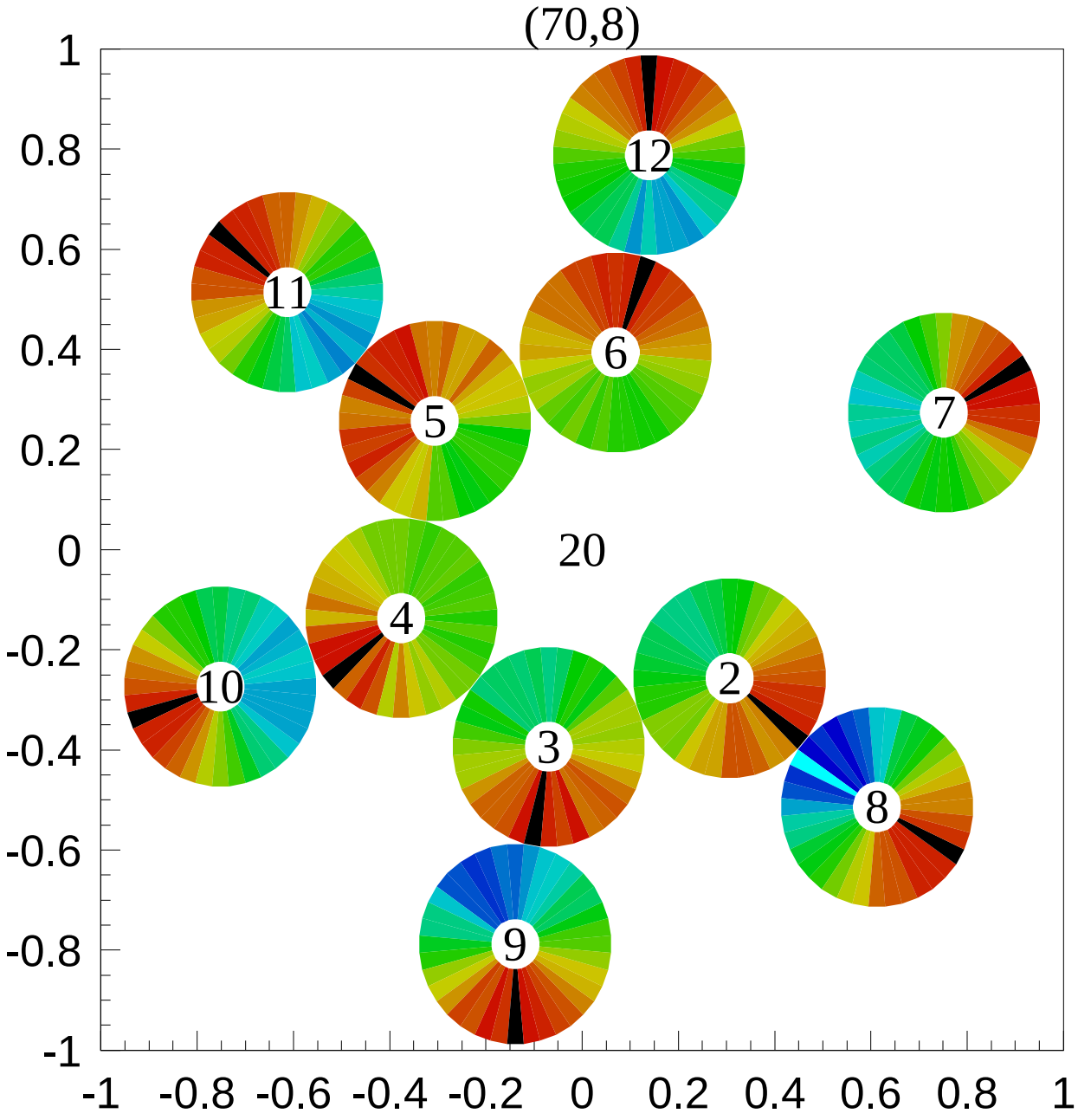

(69,45)
tilted LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
14
12
10
8
6
4
2
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

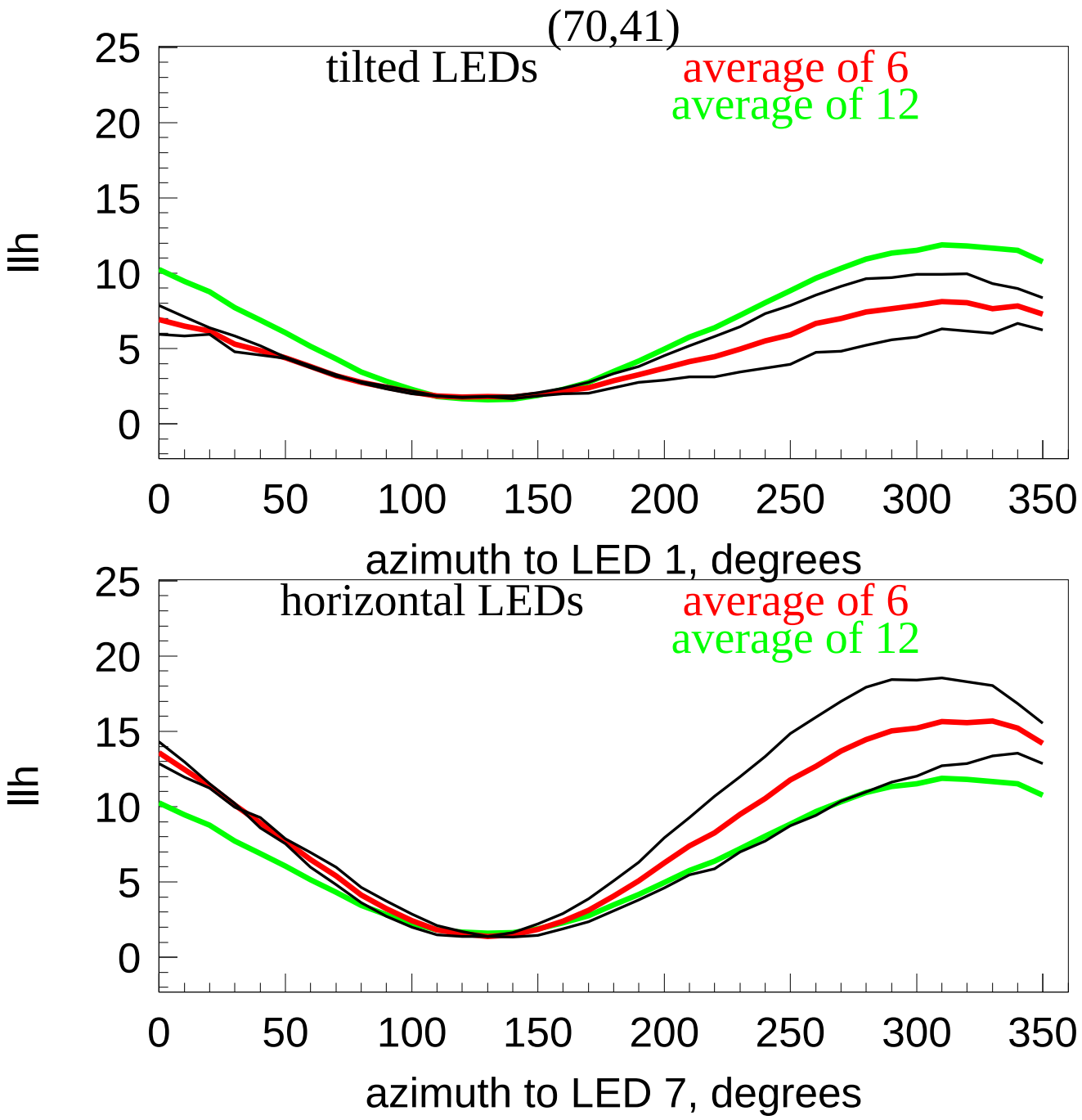

(69,45)
12
1
2
50
4
3
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

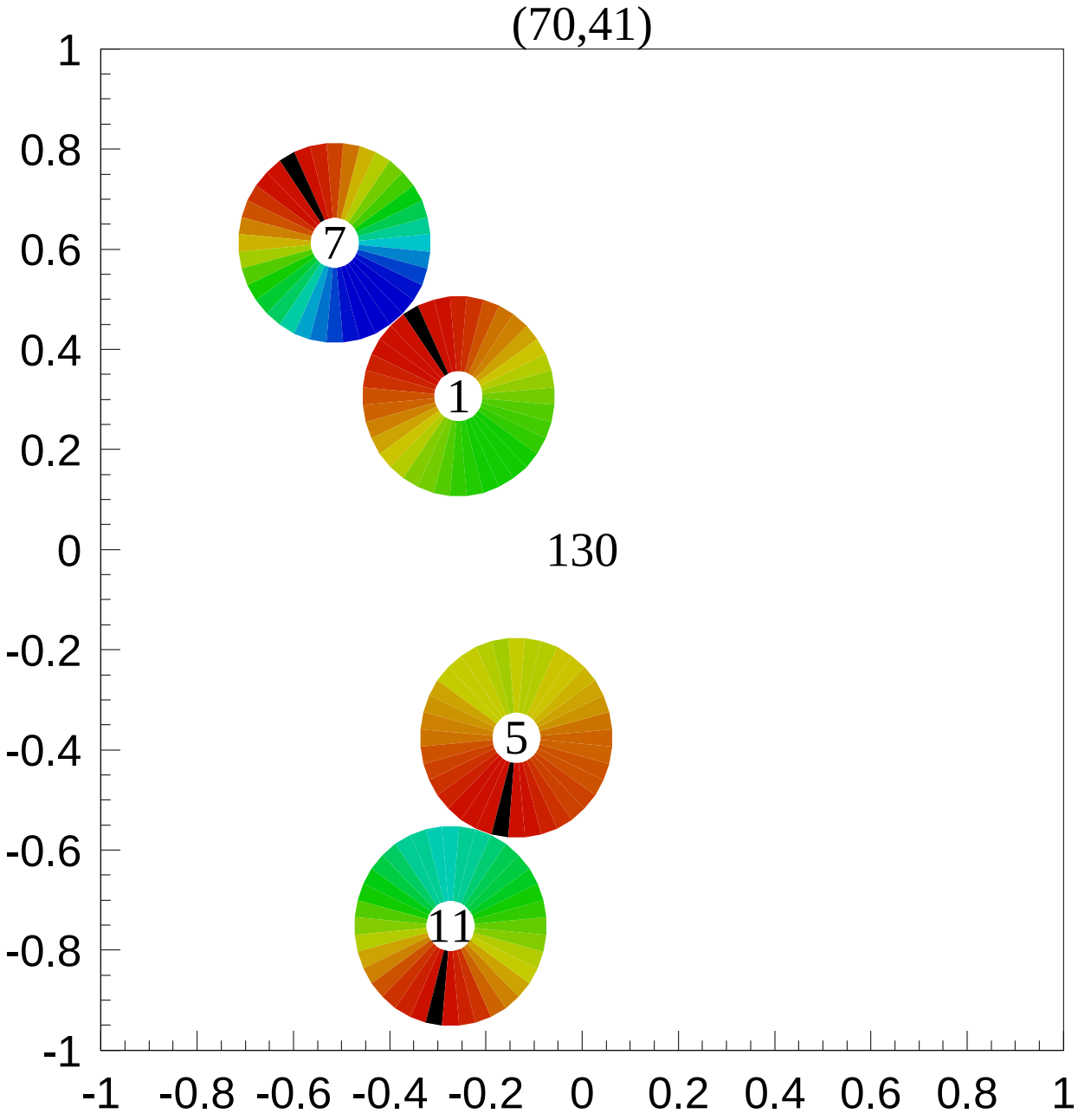

(69,46)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

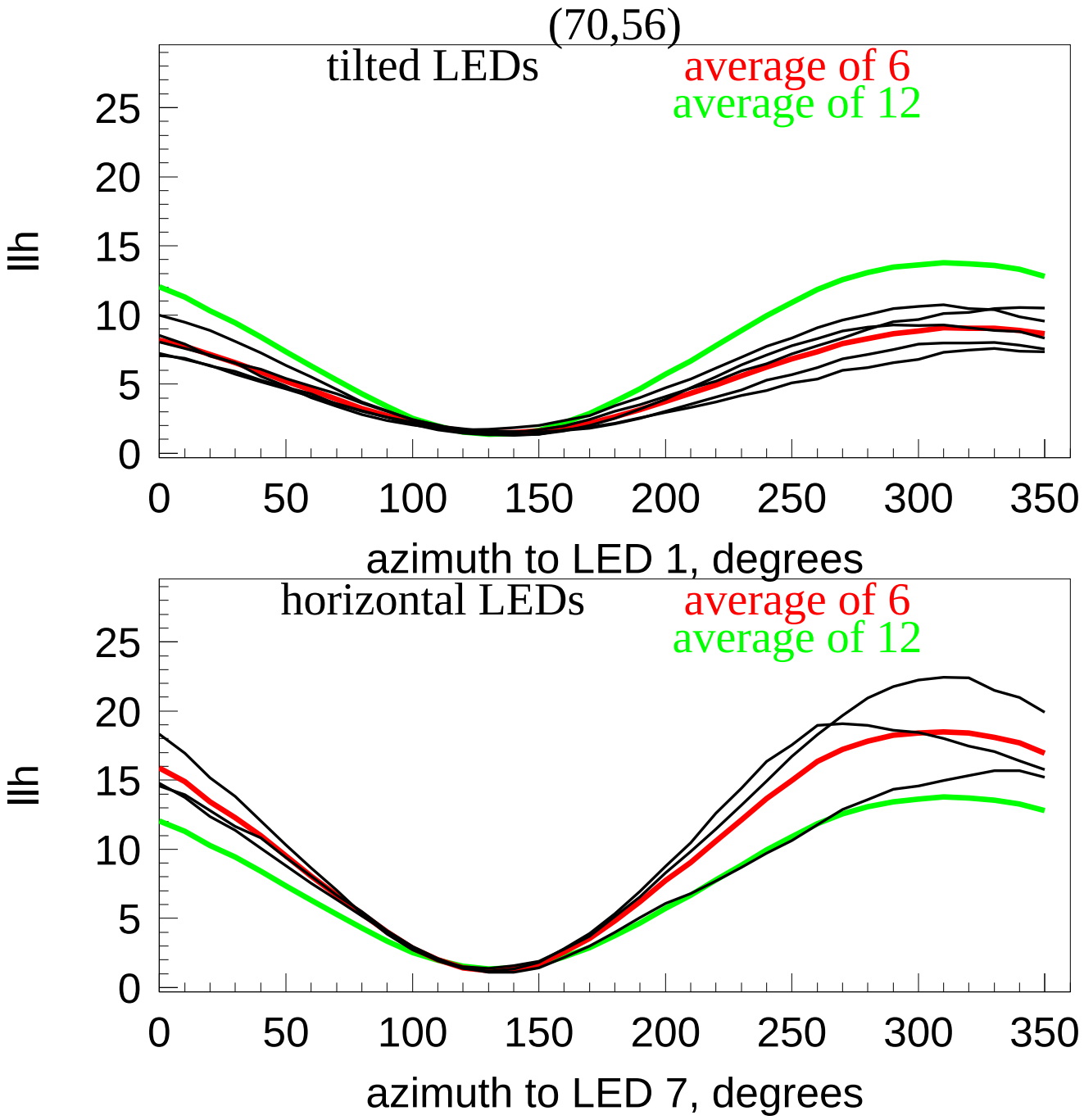

(69,46)
250
1
5
7
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

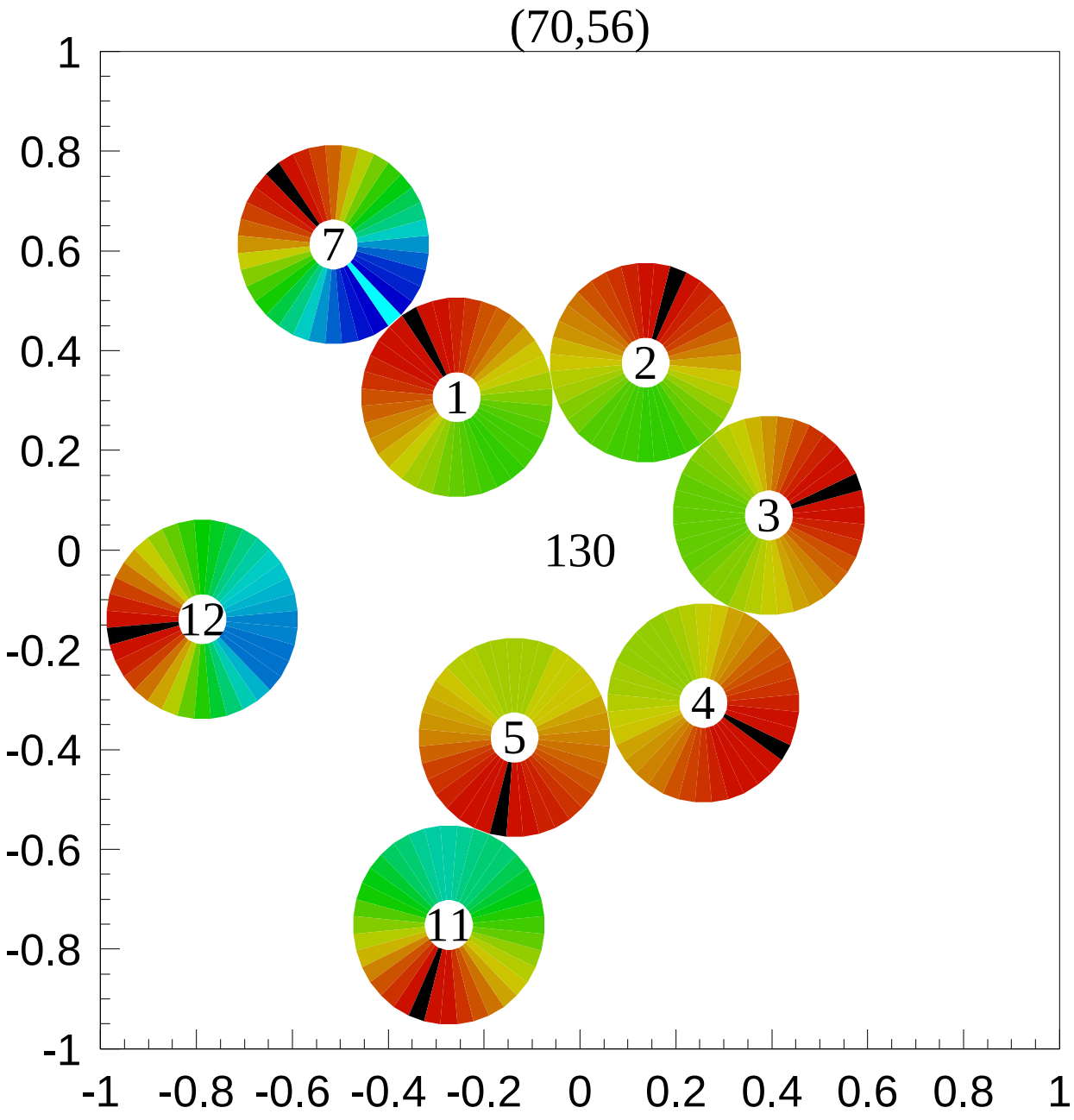

(70,8)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

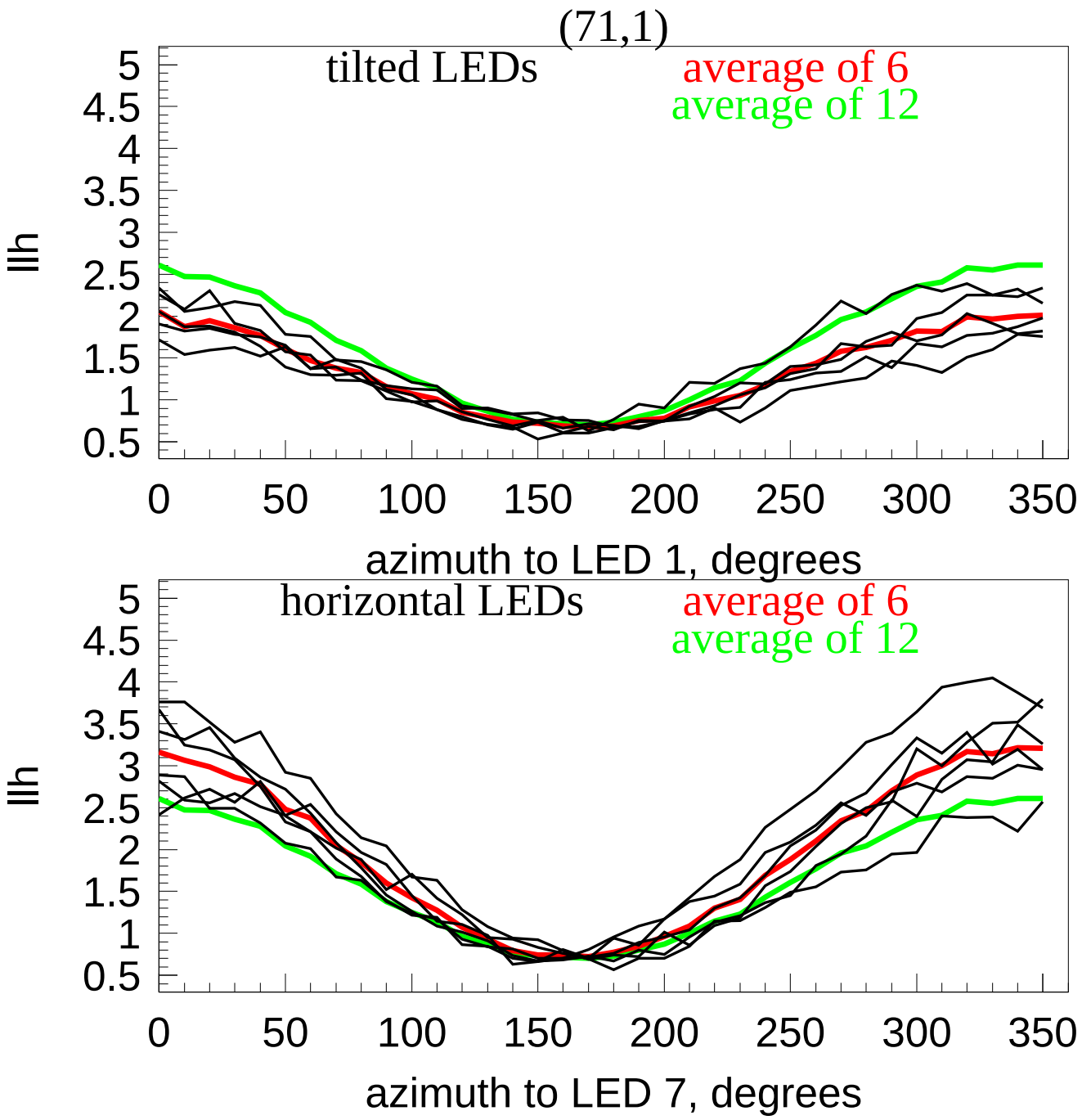

(70,8)
12
11
6
5
7
20
4
10
2
3
8
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

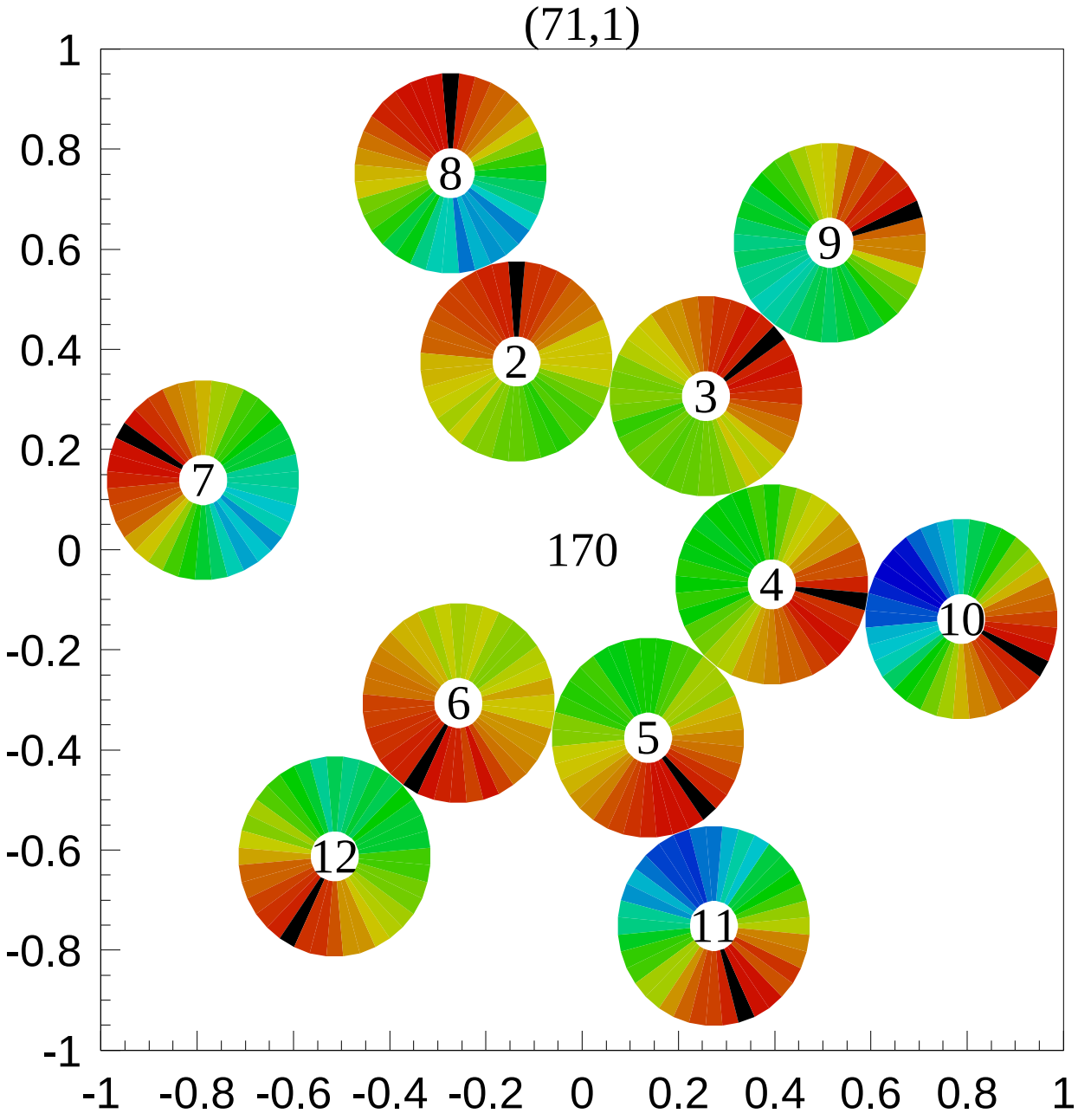

(70,41)
tilted LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

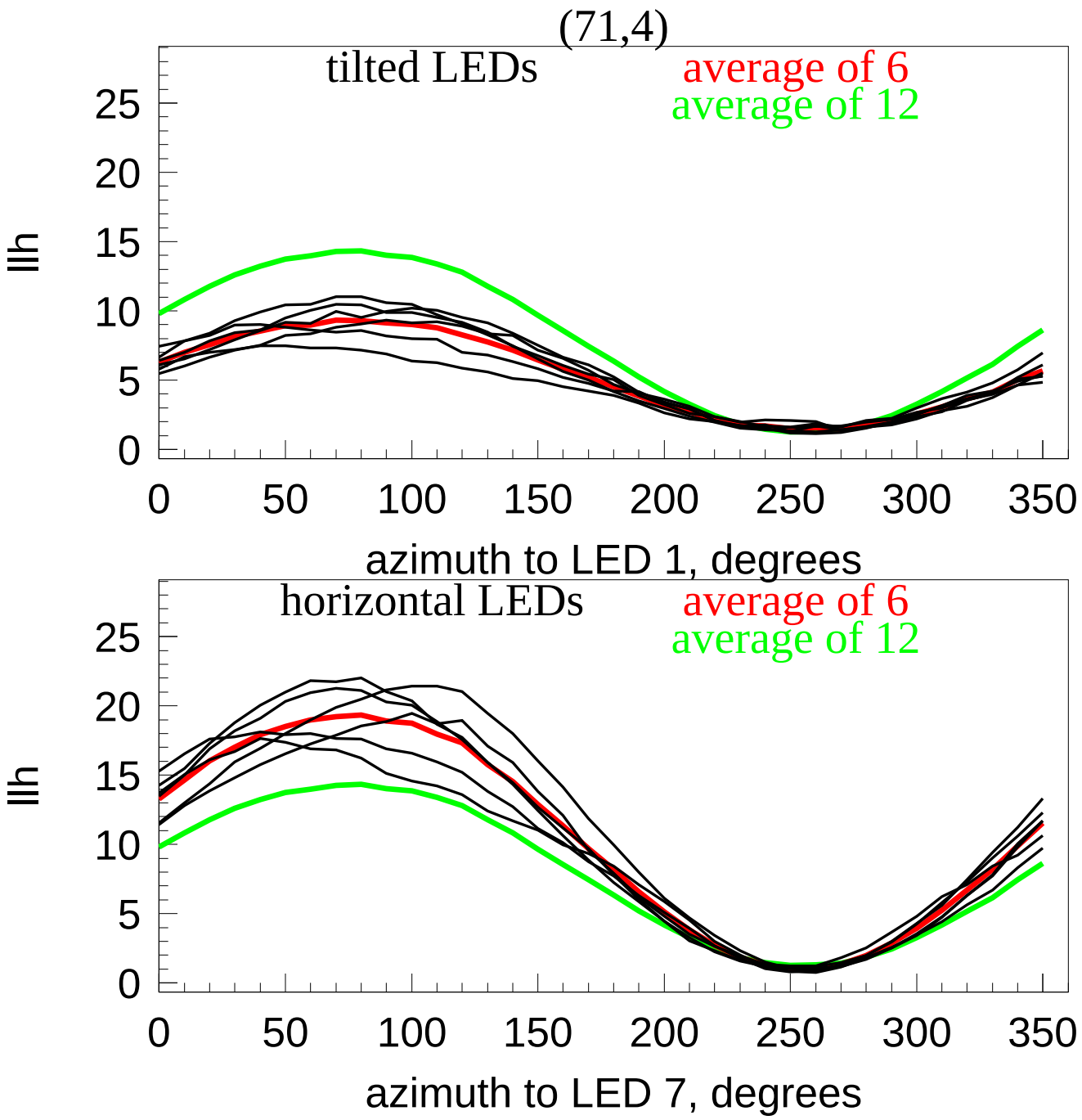

(70,41)
7
1
130
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

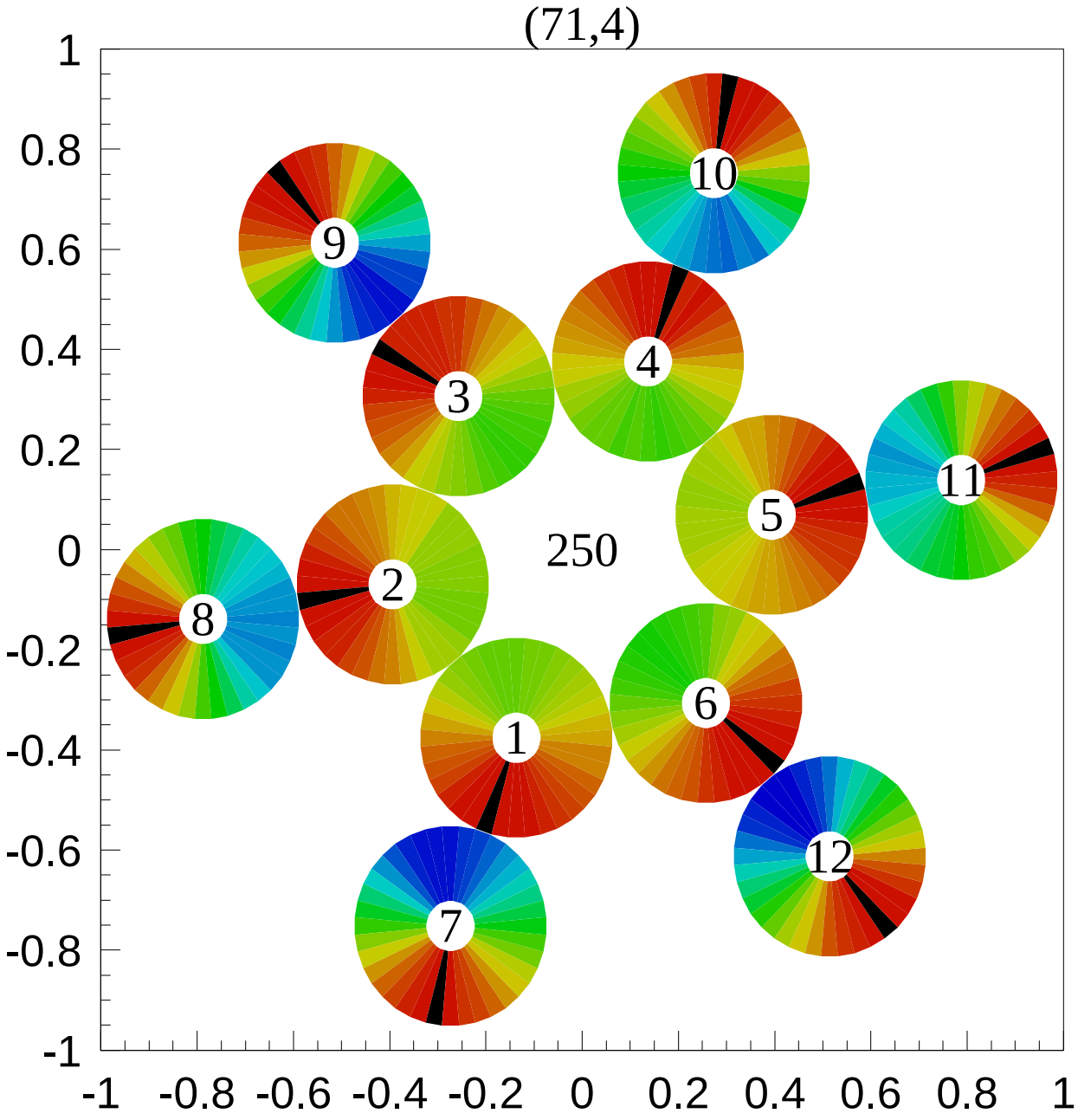

(70,56)
tilted LEDs
average of 6
average of 12
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

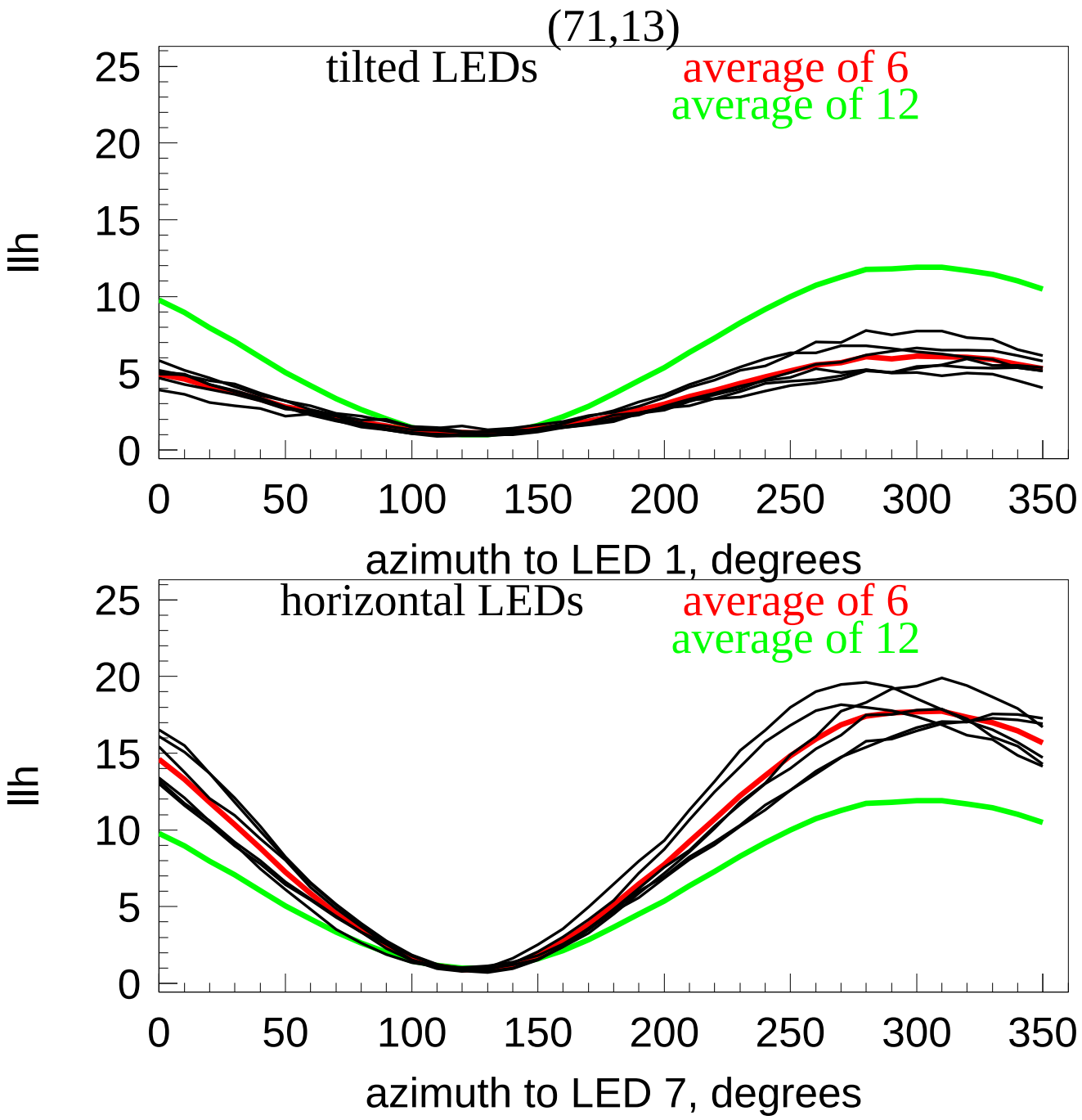

(70,56)
7
1
2
3
130
12
4
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

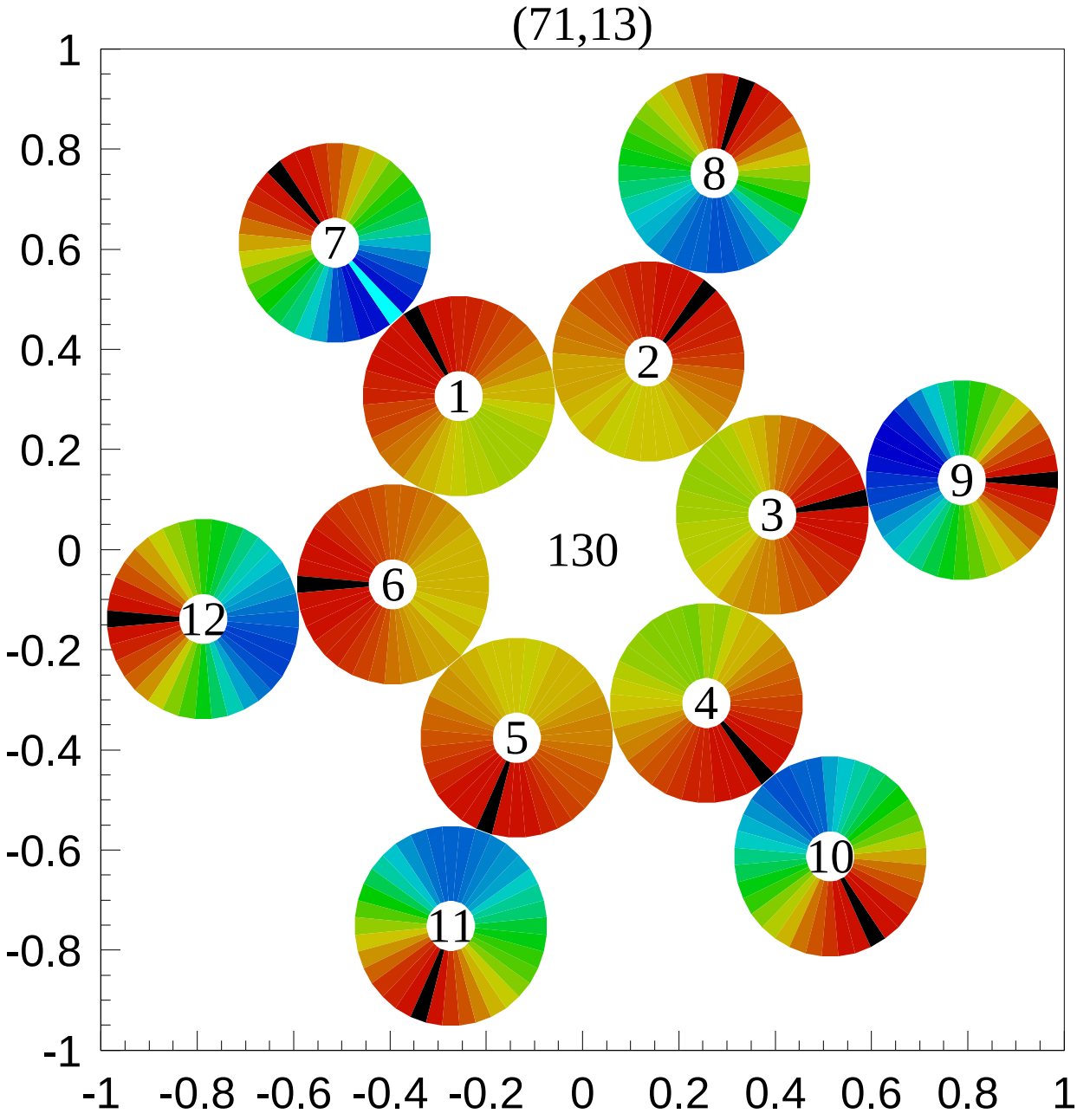

(71,1)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

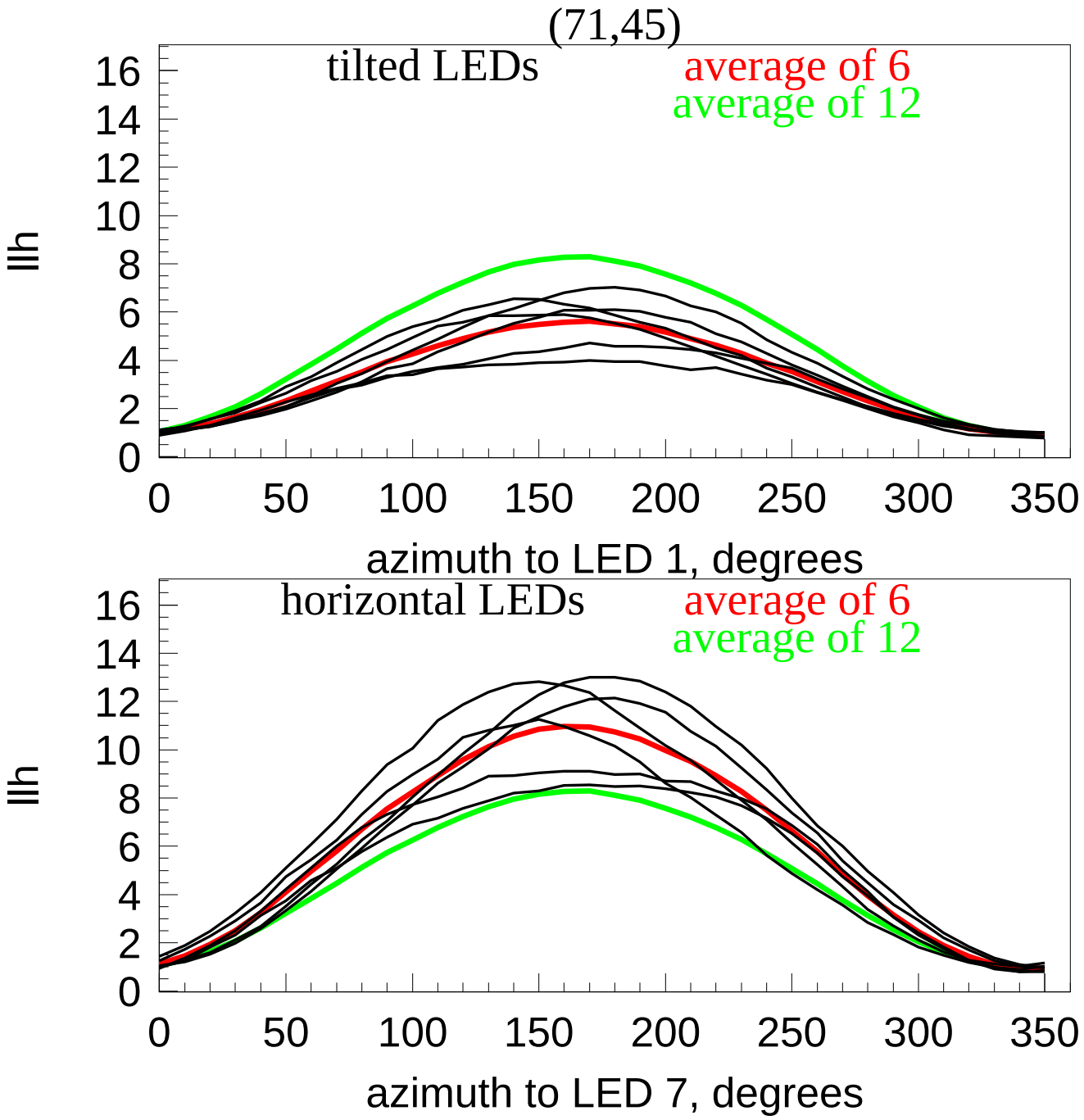

(71,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
9
2
3
7
170
4
10
6
5
12
11

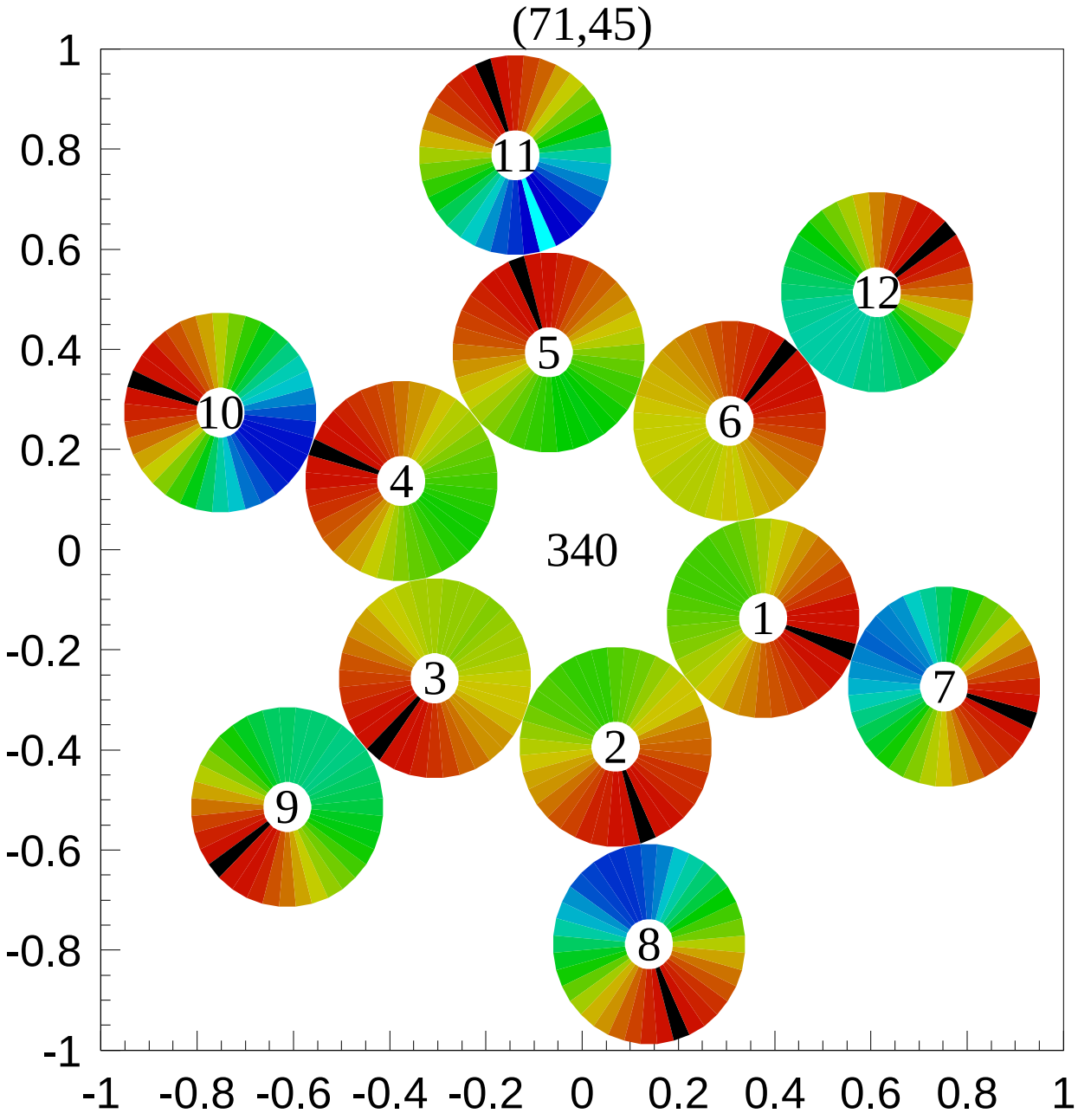

(71,4)
tilted LEDs
average of 6
average of 12
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
25
20
15
10
5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

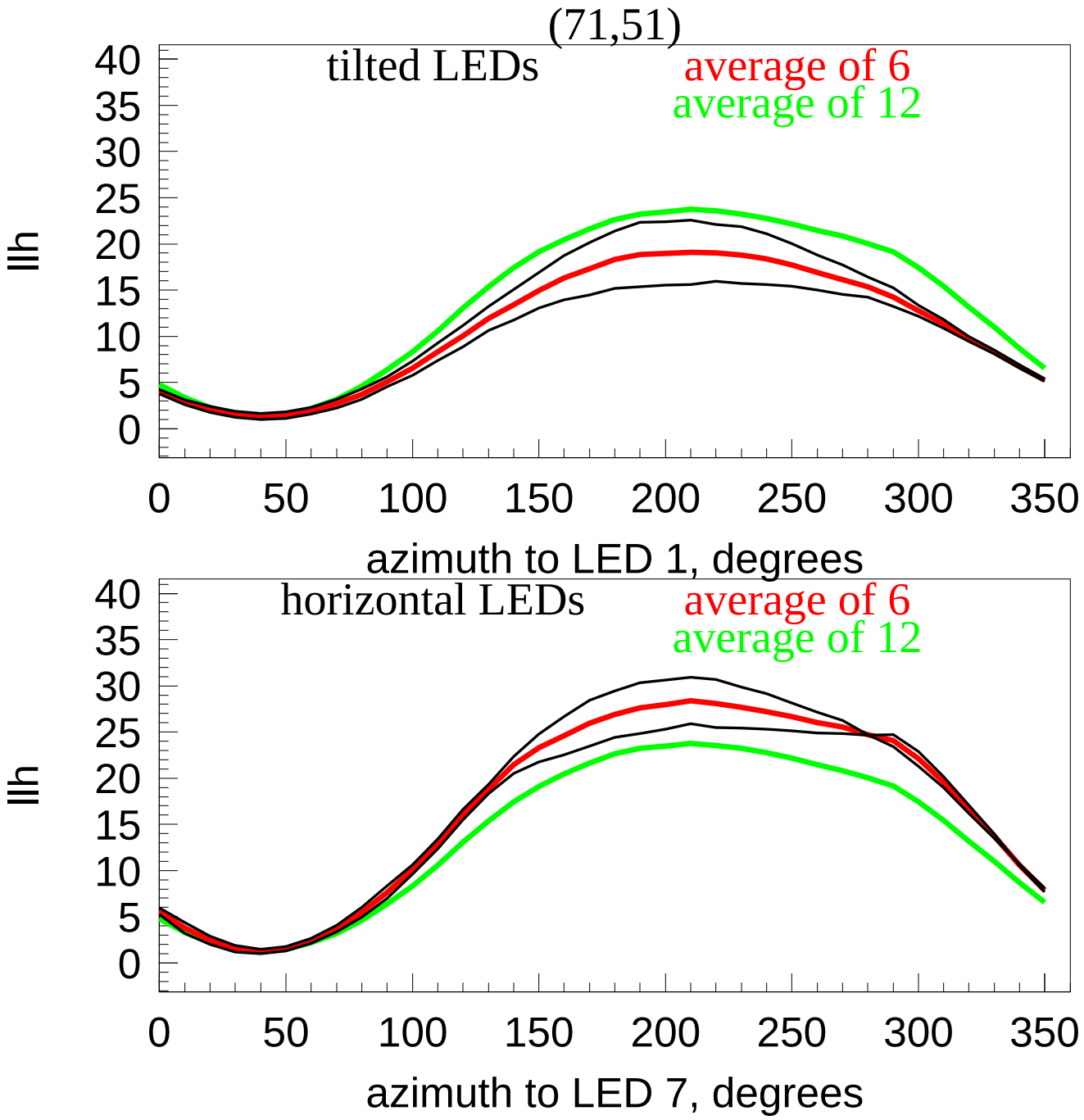

(71,4)
250
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

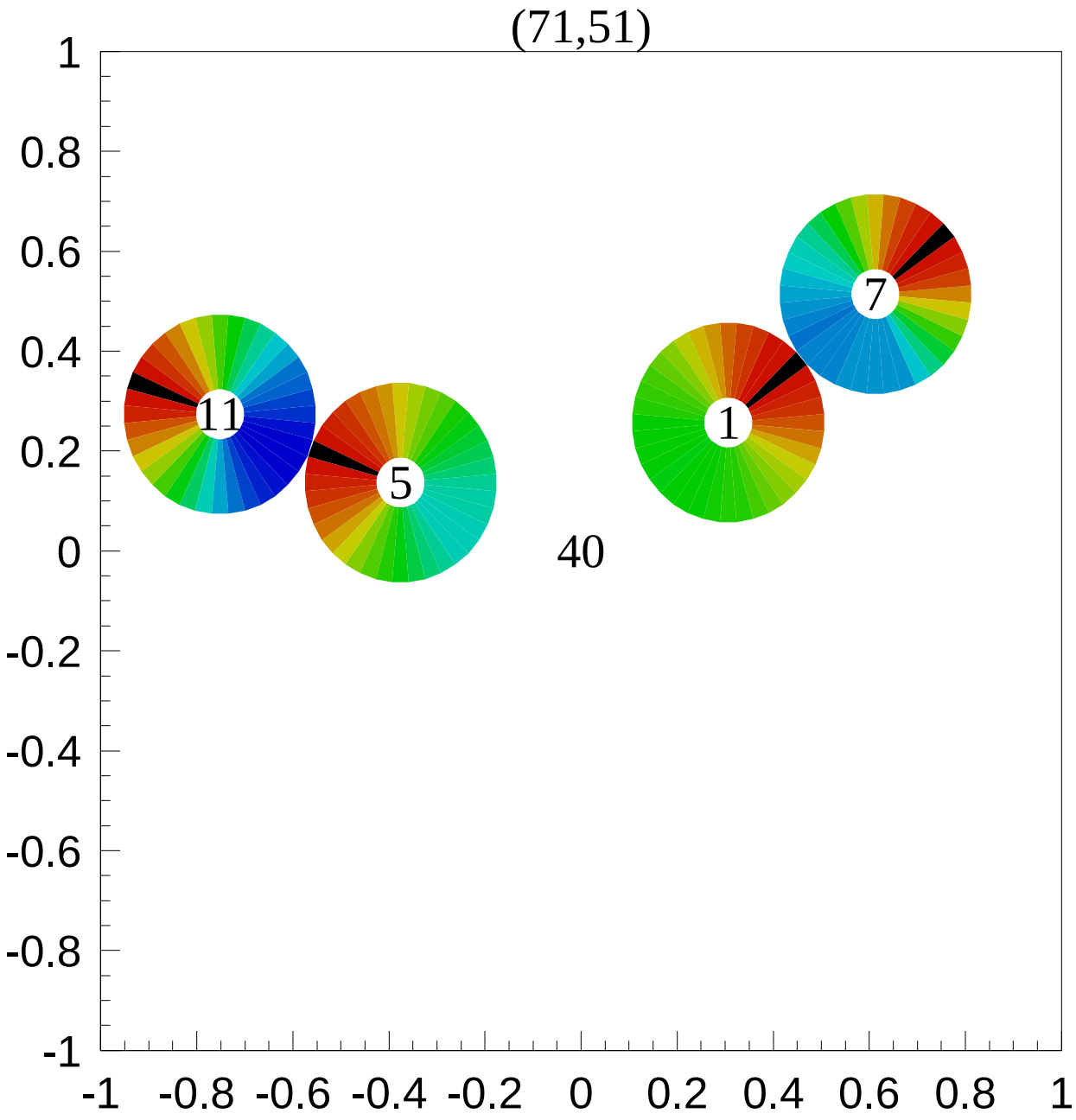

(71,13)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

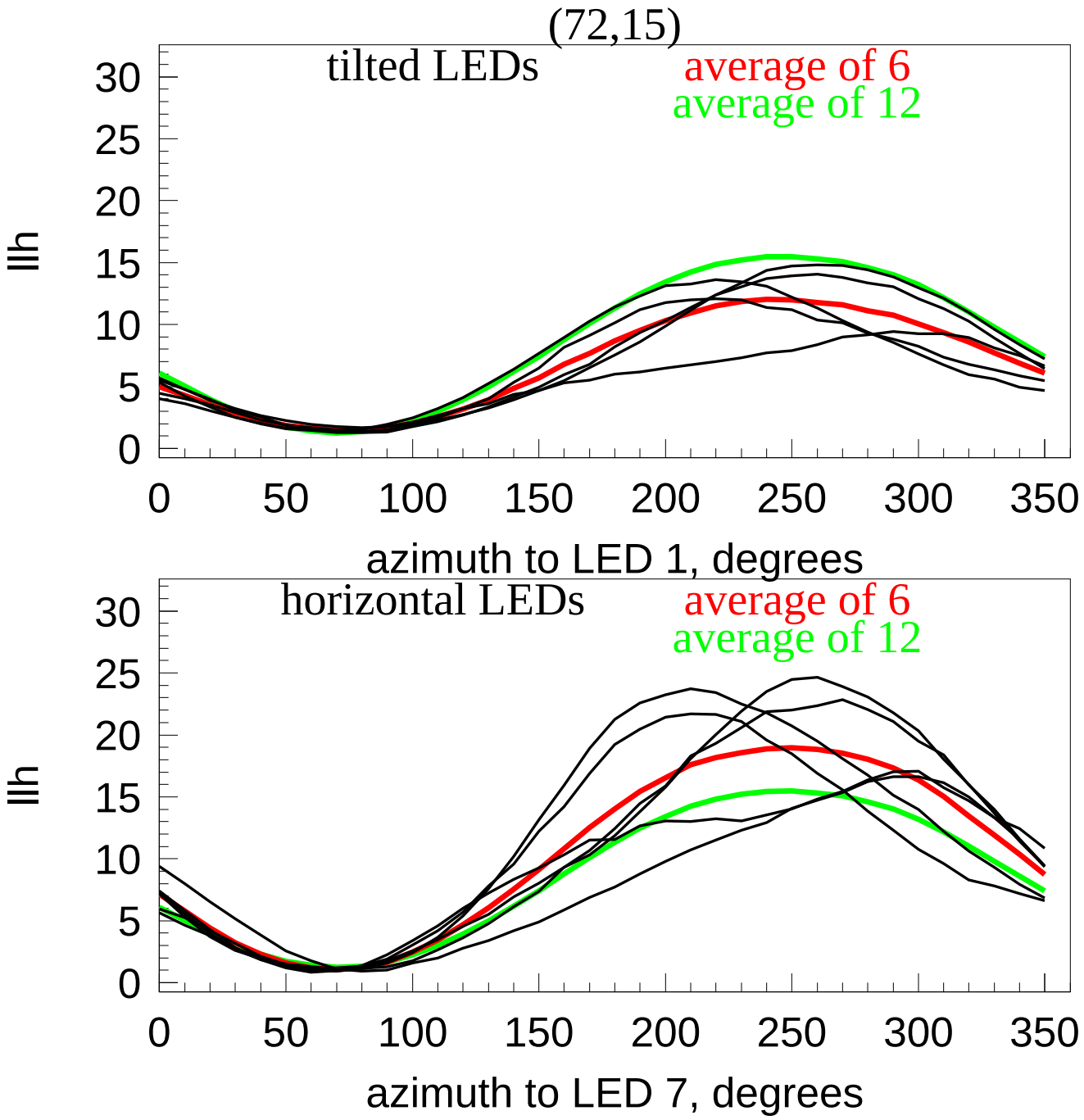

(71,13)
130
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

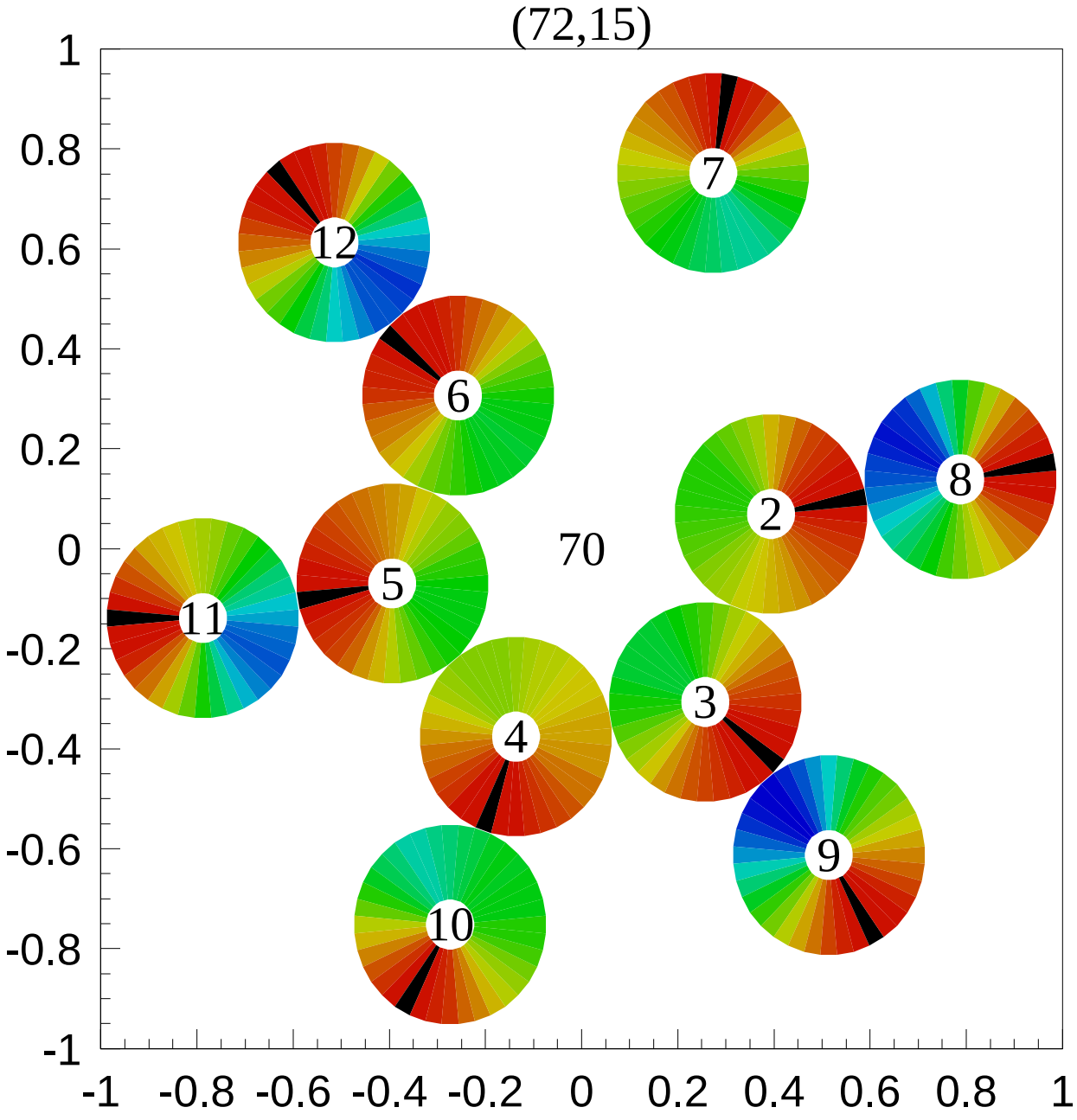

(71,45)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

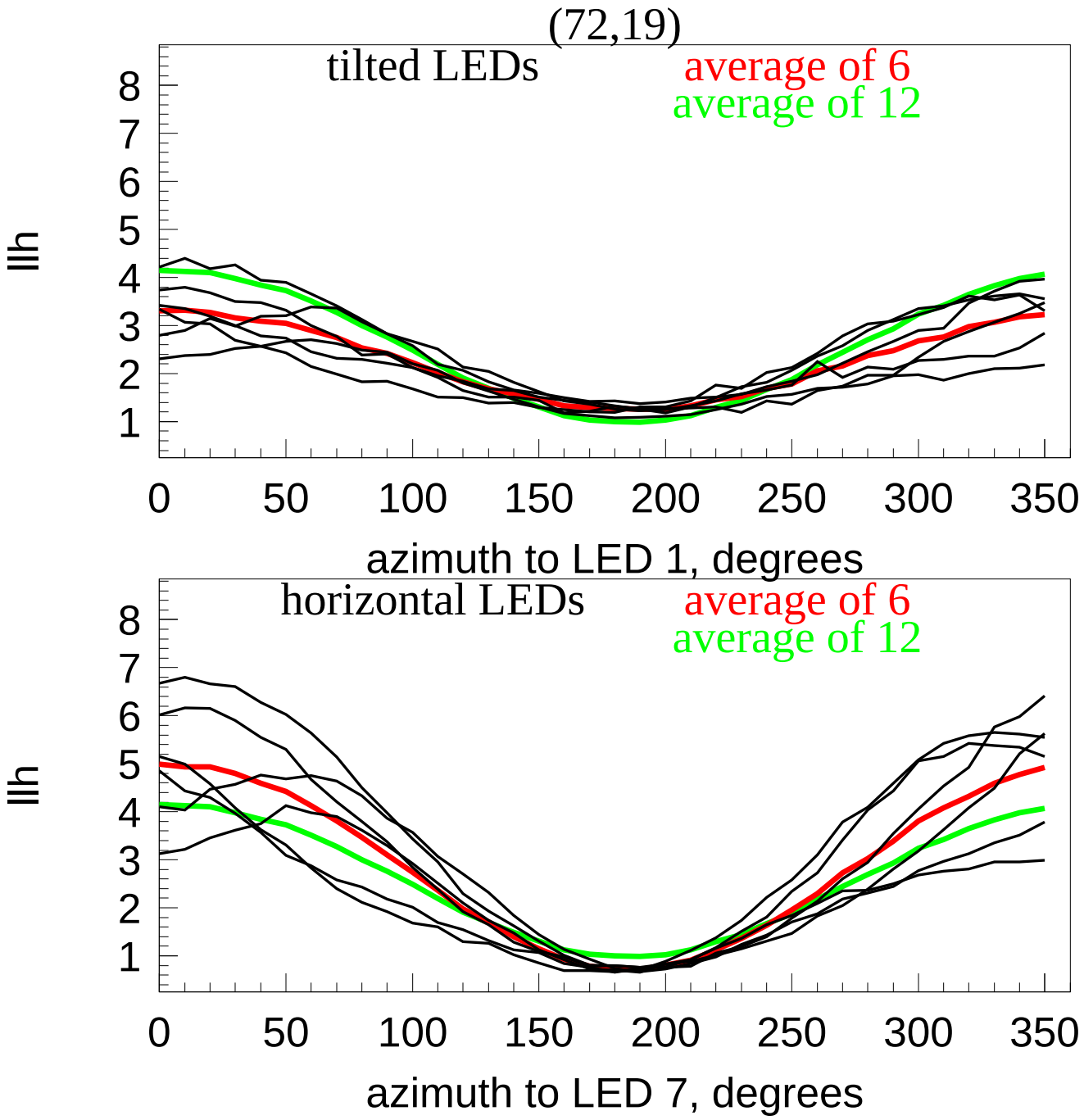

(71,45)
11
12
5
10
6
4
340
1
3
7
2
9
8
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

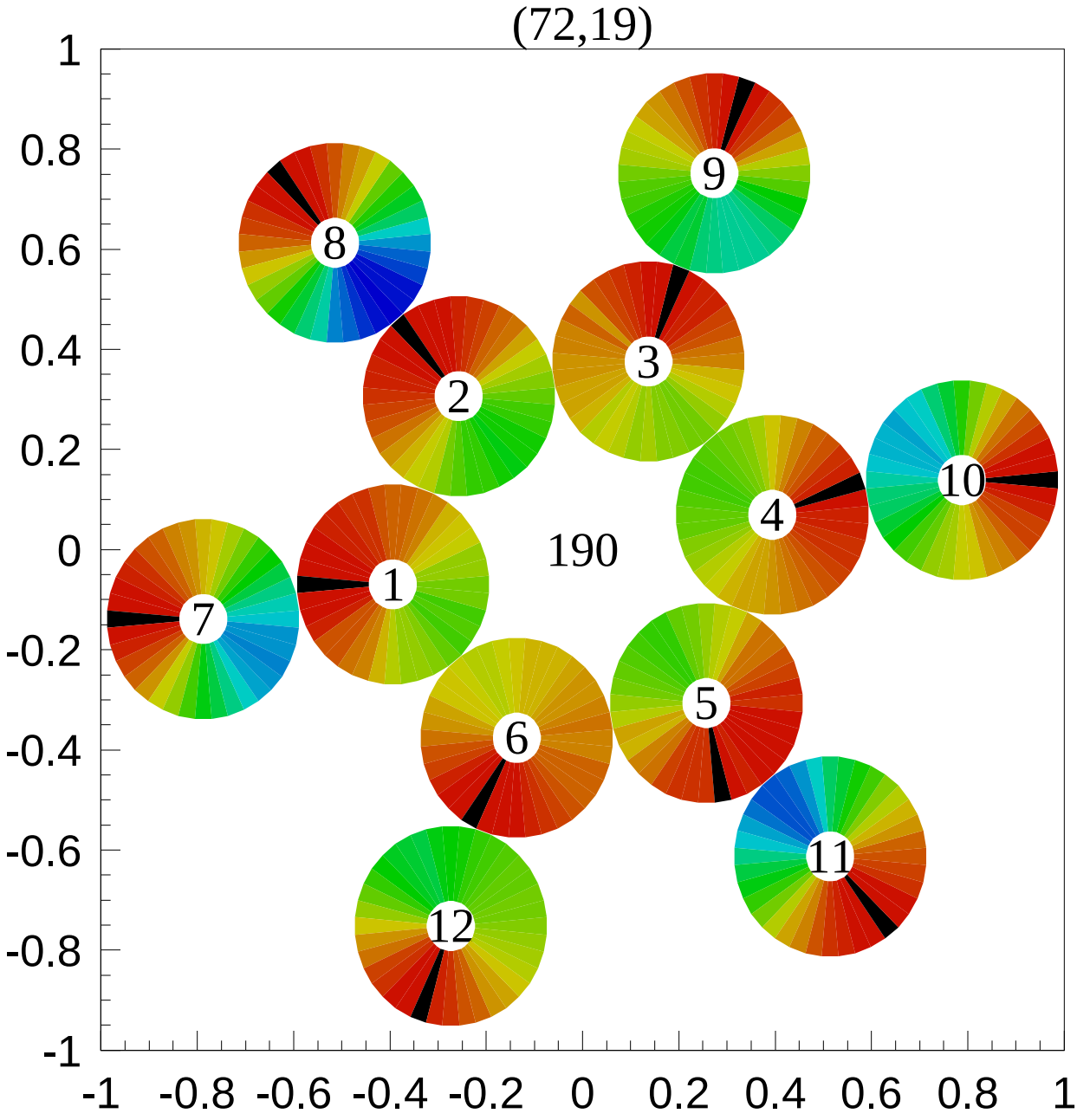

(71,51)
tilted LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
40
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

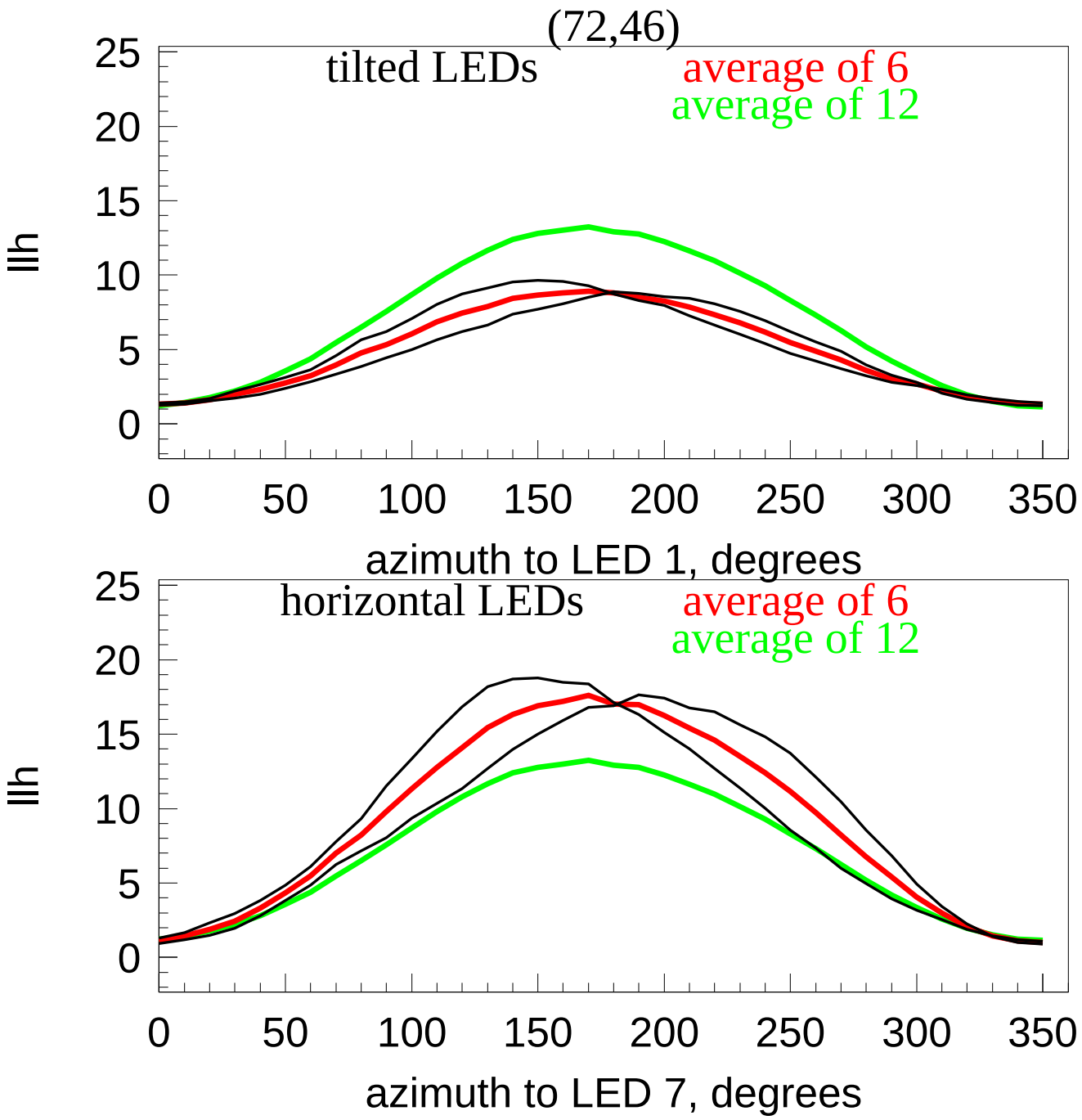

(71,51)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
40
1
7

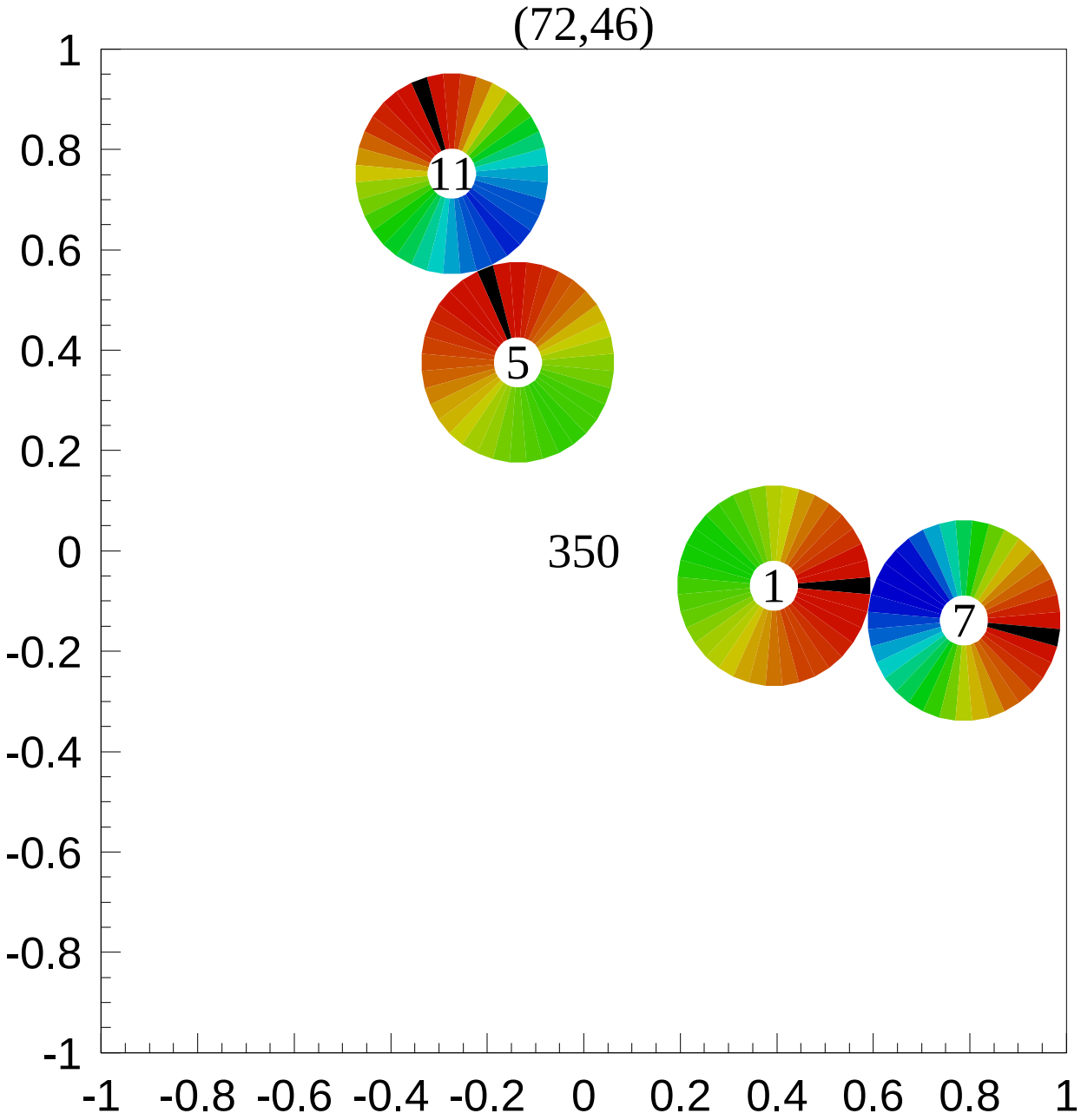

(72,15)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

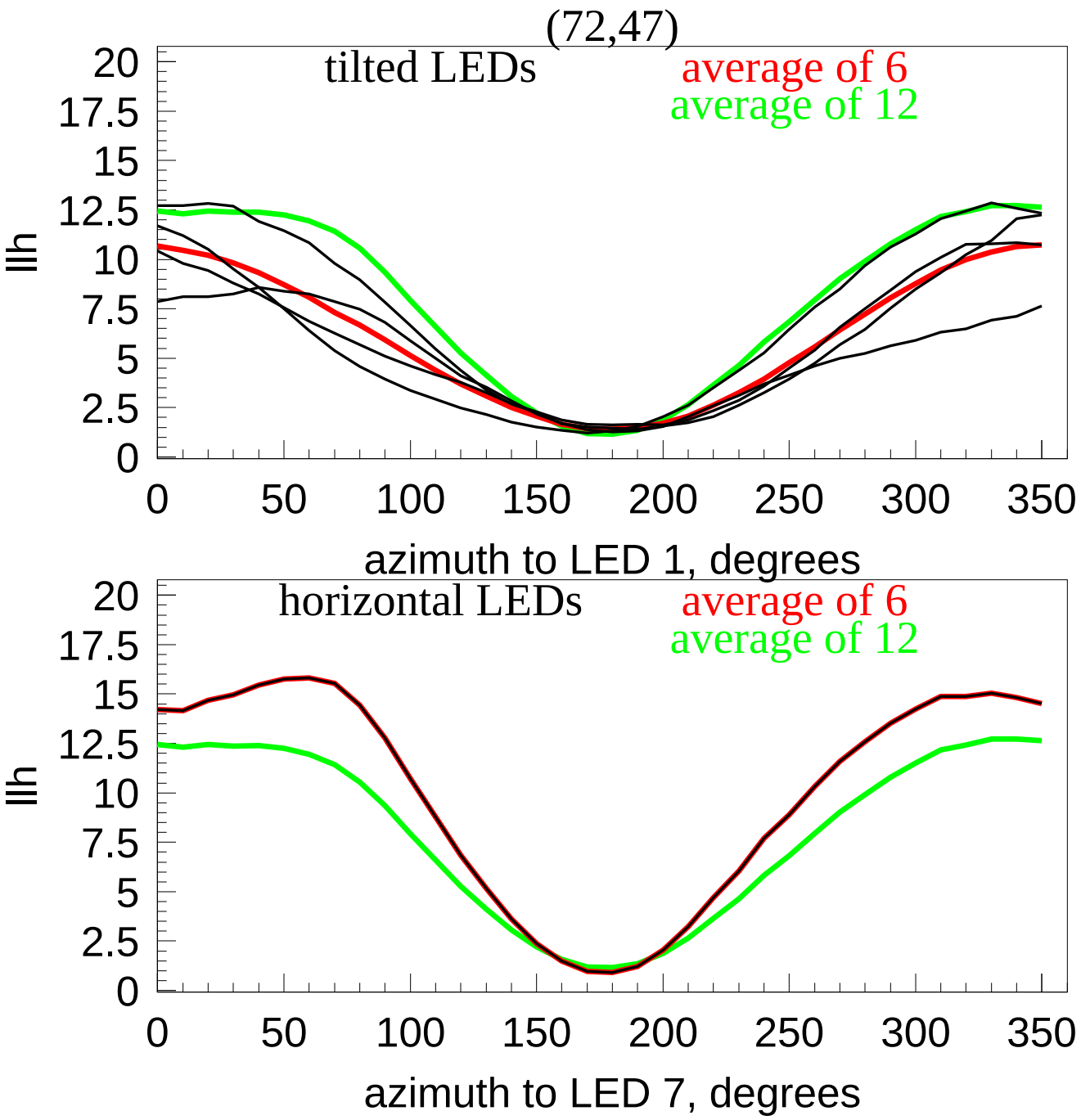

(72,15)
70
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

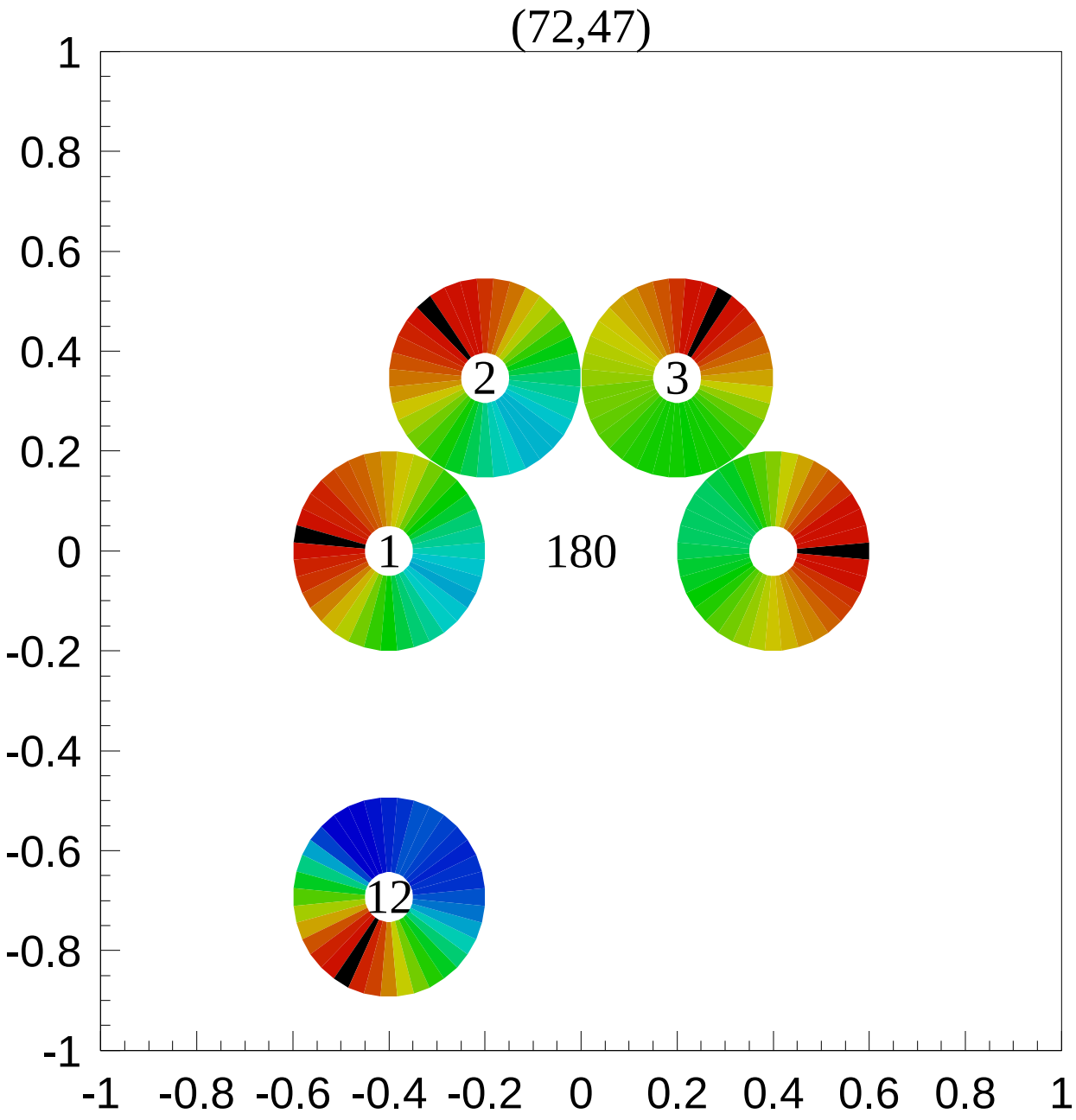

(72,19)
tilted LEDs
average of 6
average of 12
llh
8
7
6
5
4
3
2
1
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

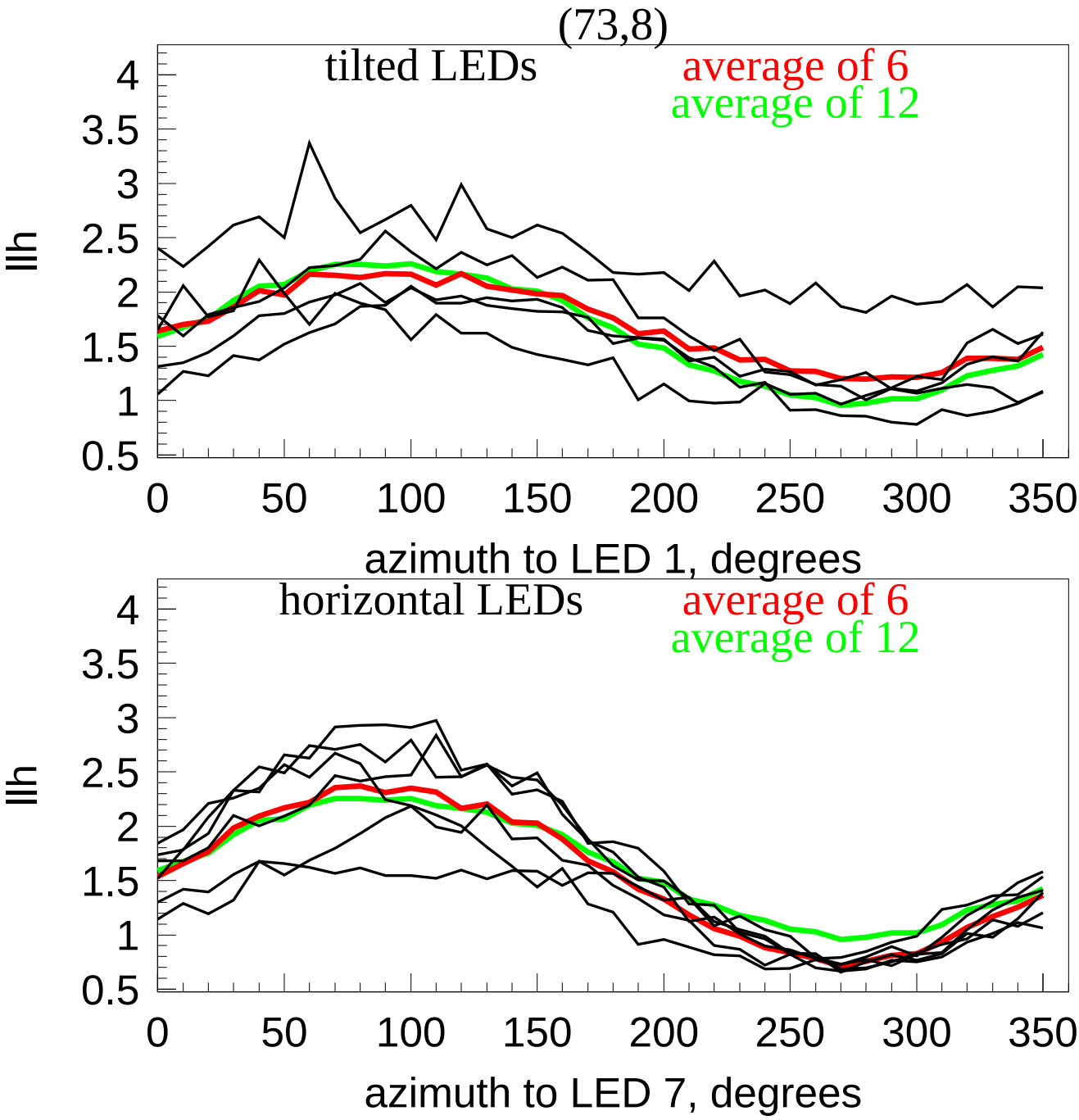

(72,19)
190
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

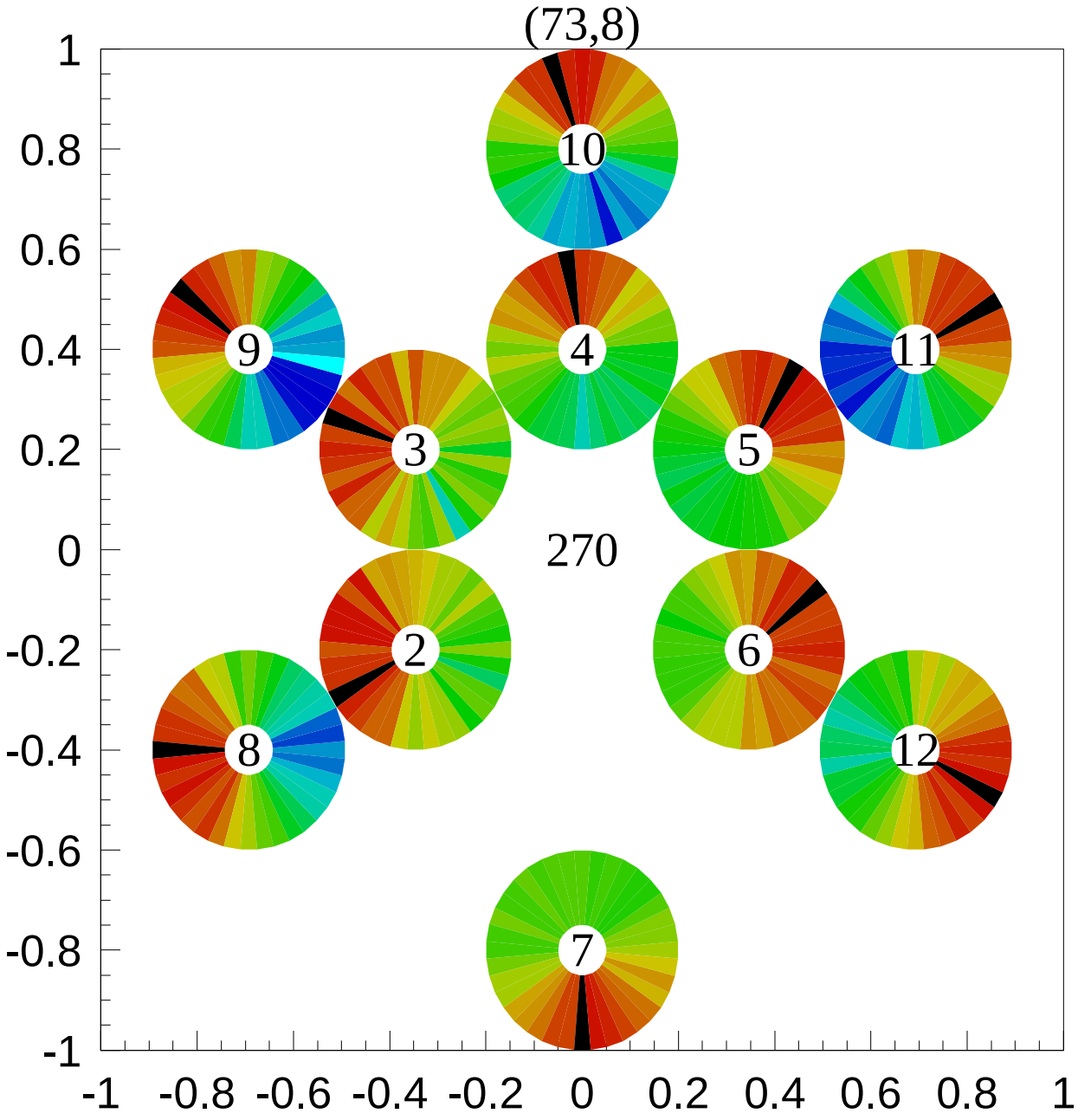

(72,46)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

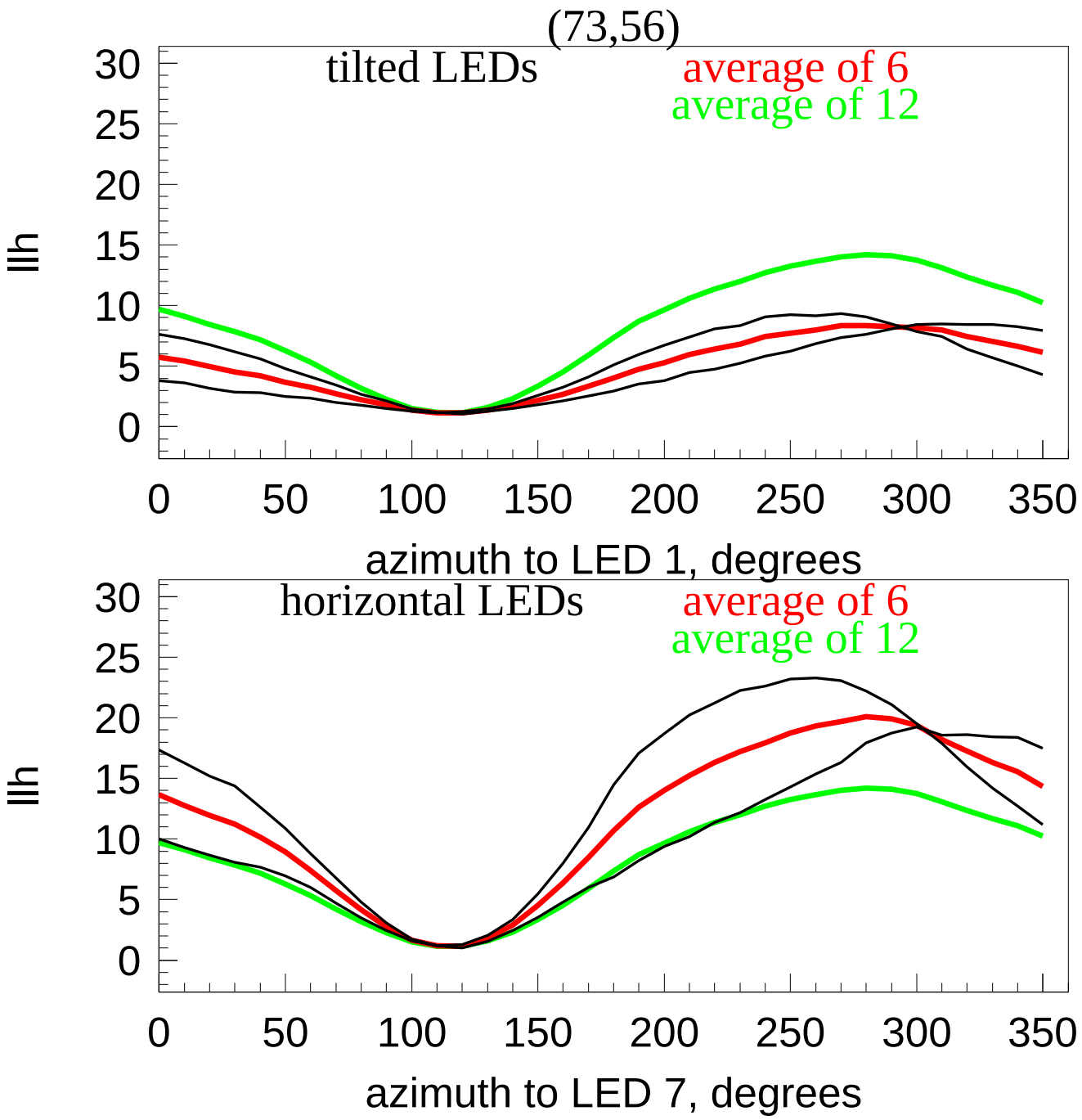

(72,46)
11
5
350
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

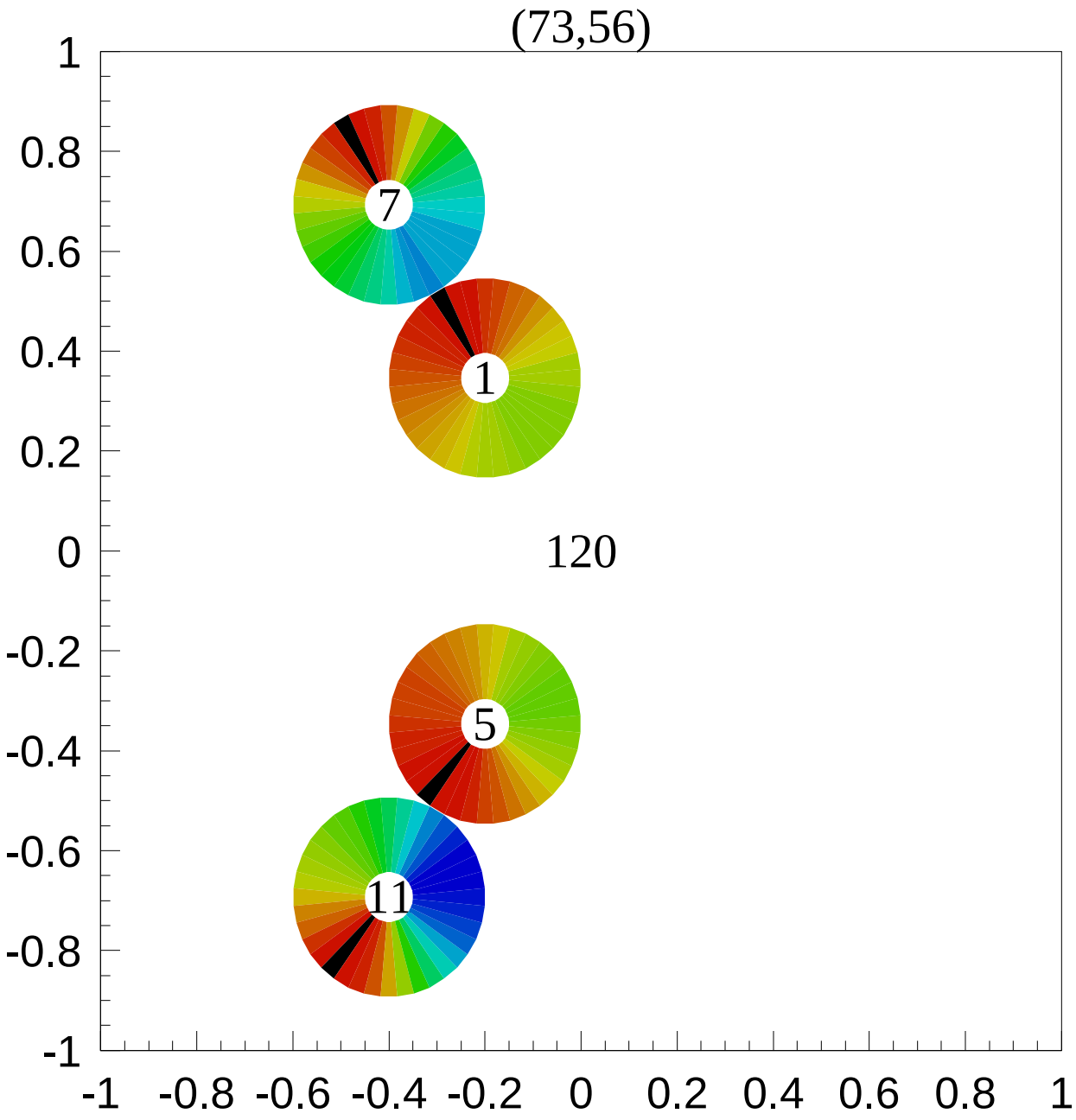

(72,47)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

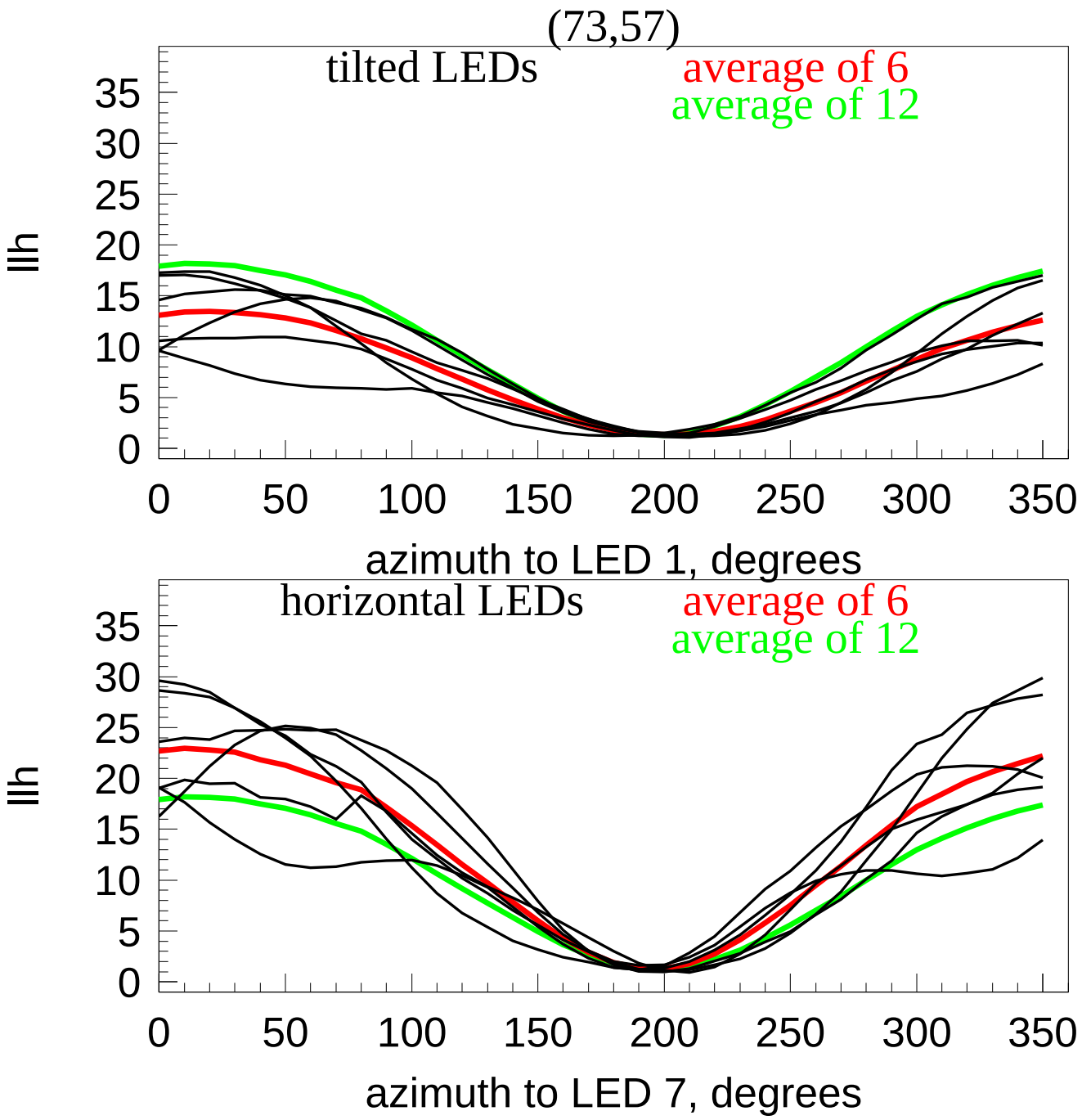

(72,47)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
2
3
1
180
12

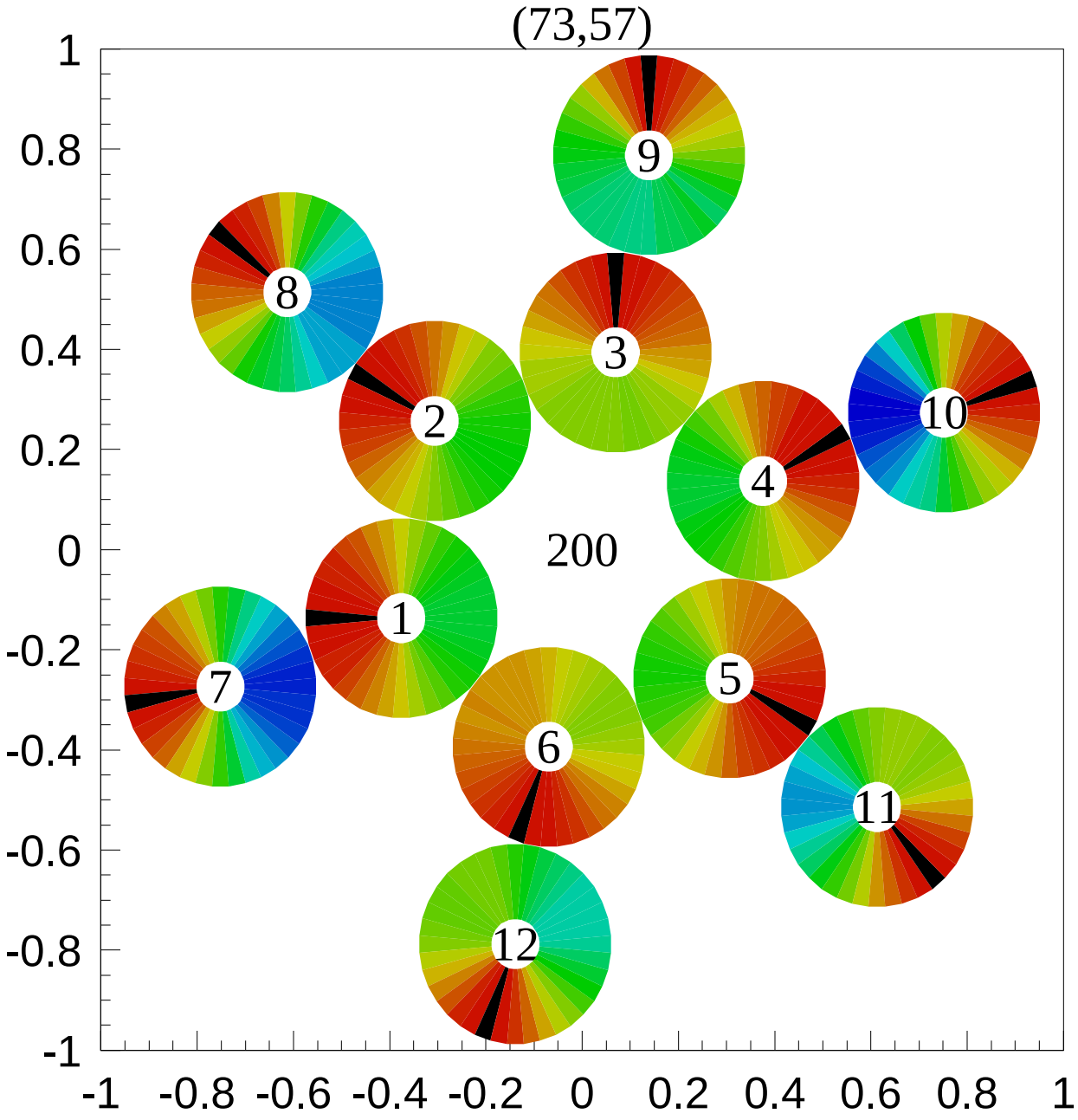

(73,8)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

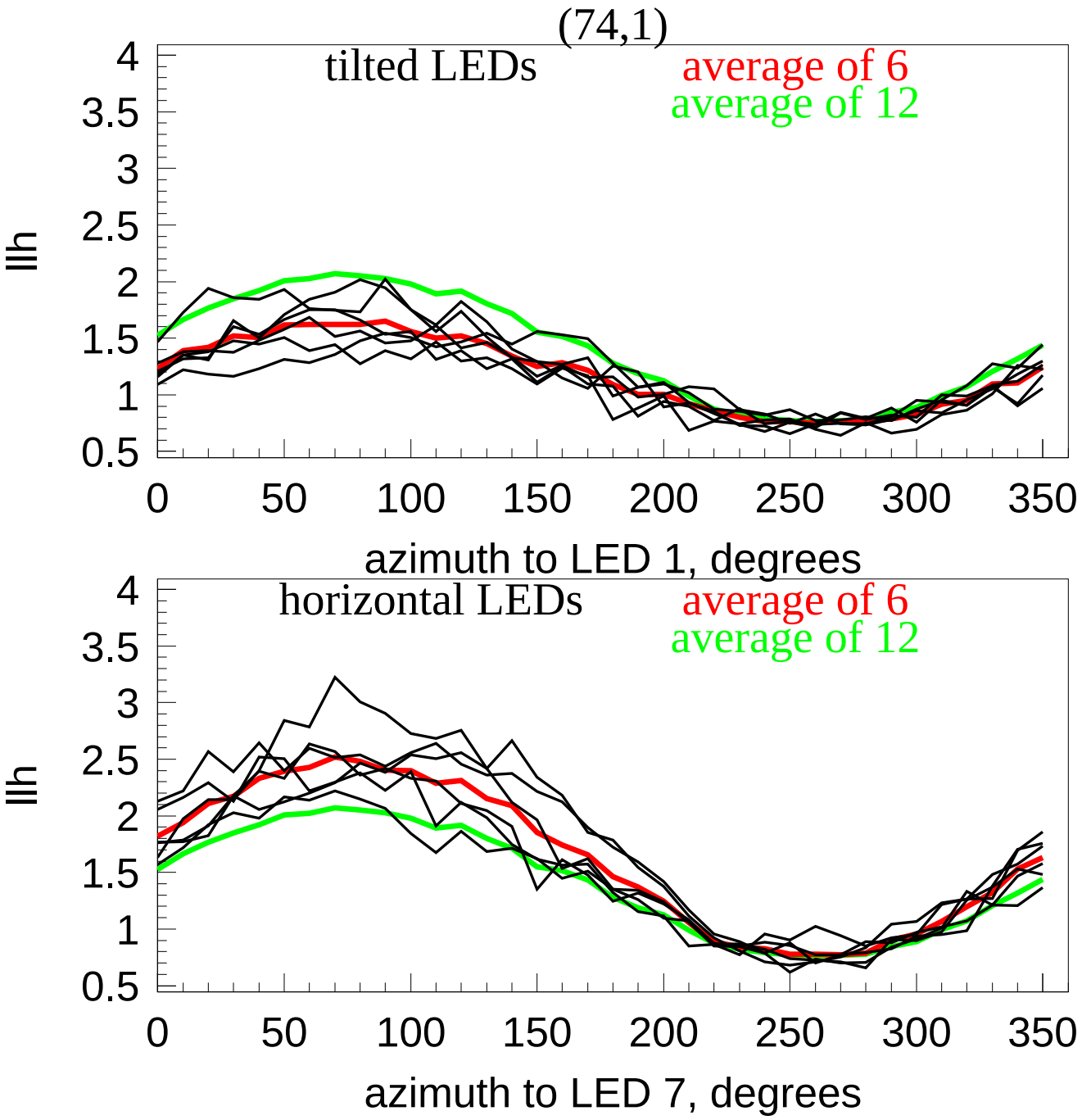

(73,8)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
9
4
11
3
5
270
2
6
8
12
7

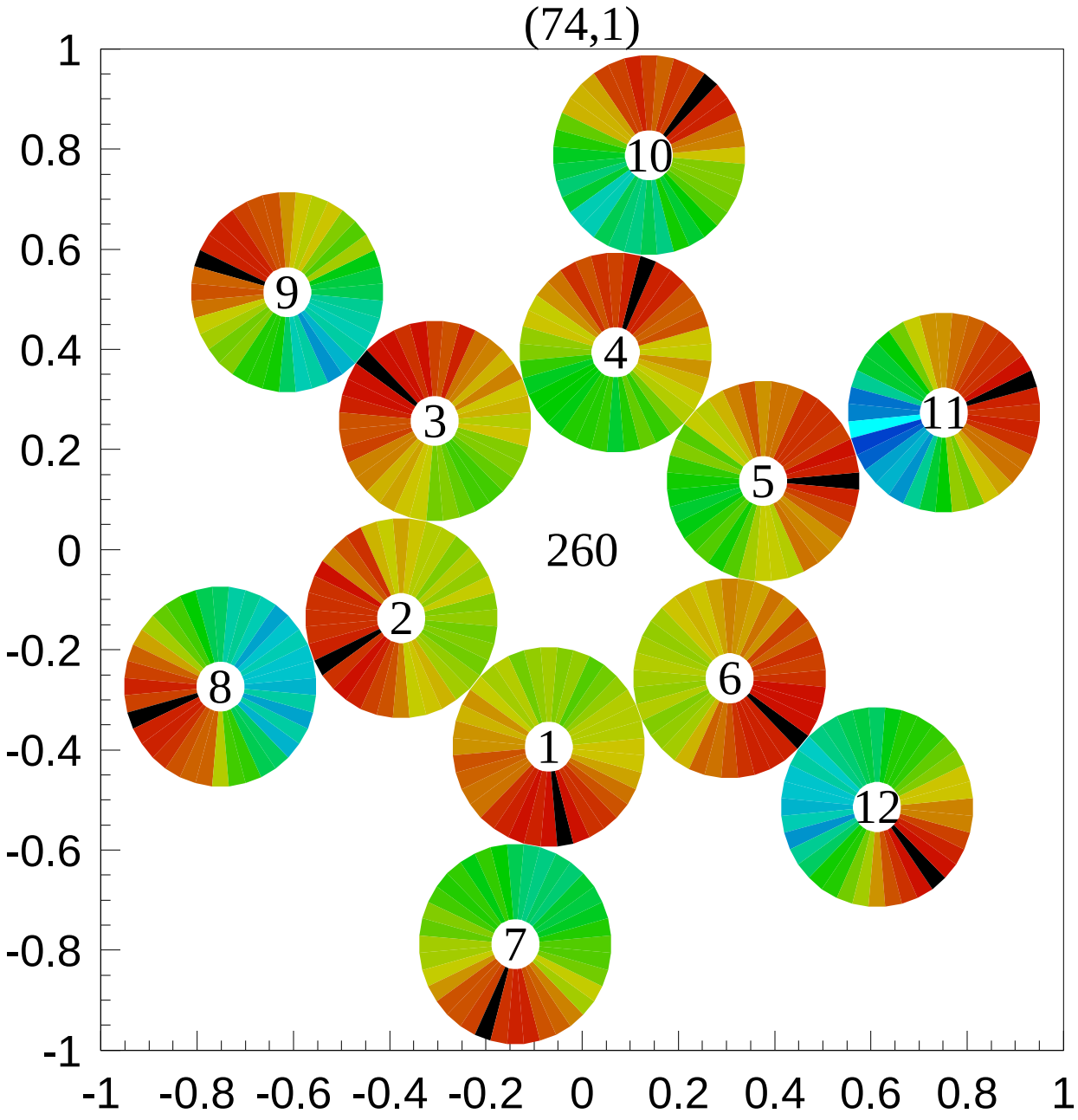

(73,56)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

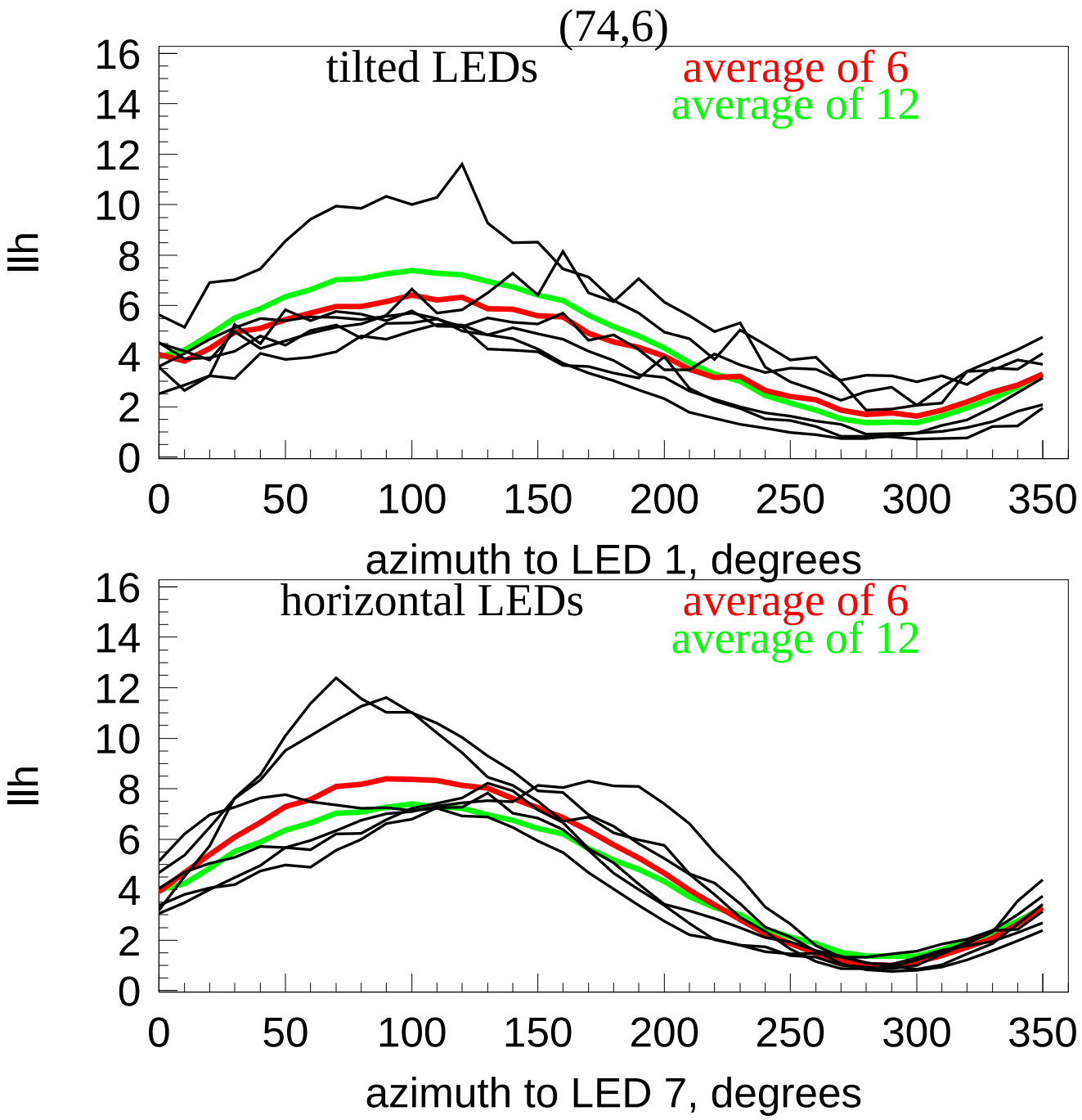

(73,56)
7
1
120
5
11
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

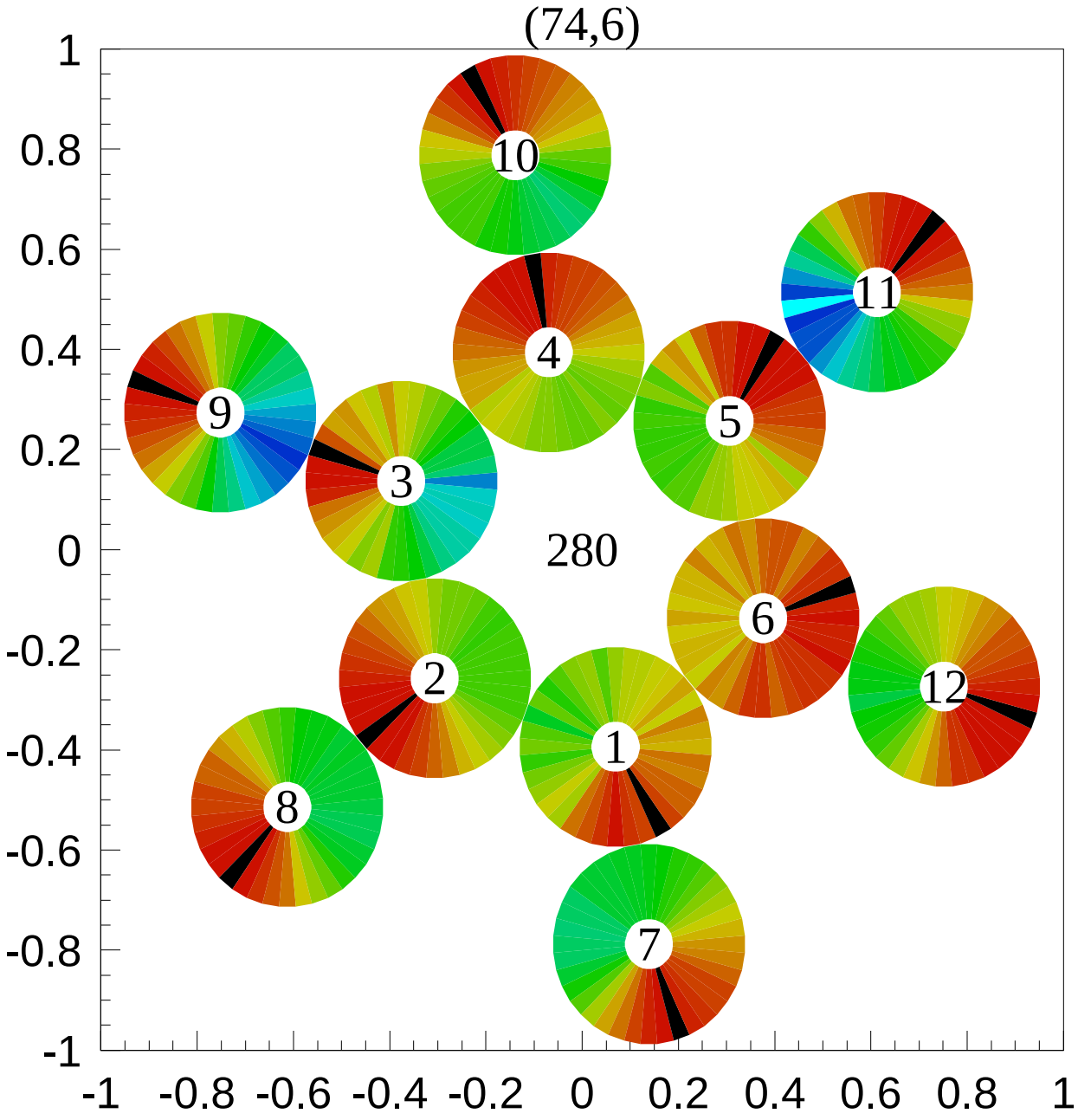

(73,57)
tilted LEDs
average of 6
average of 12
llh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

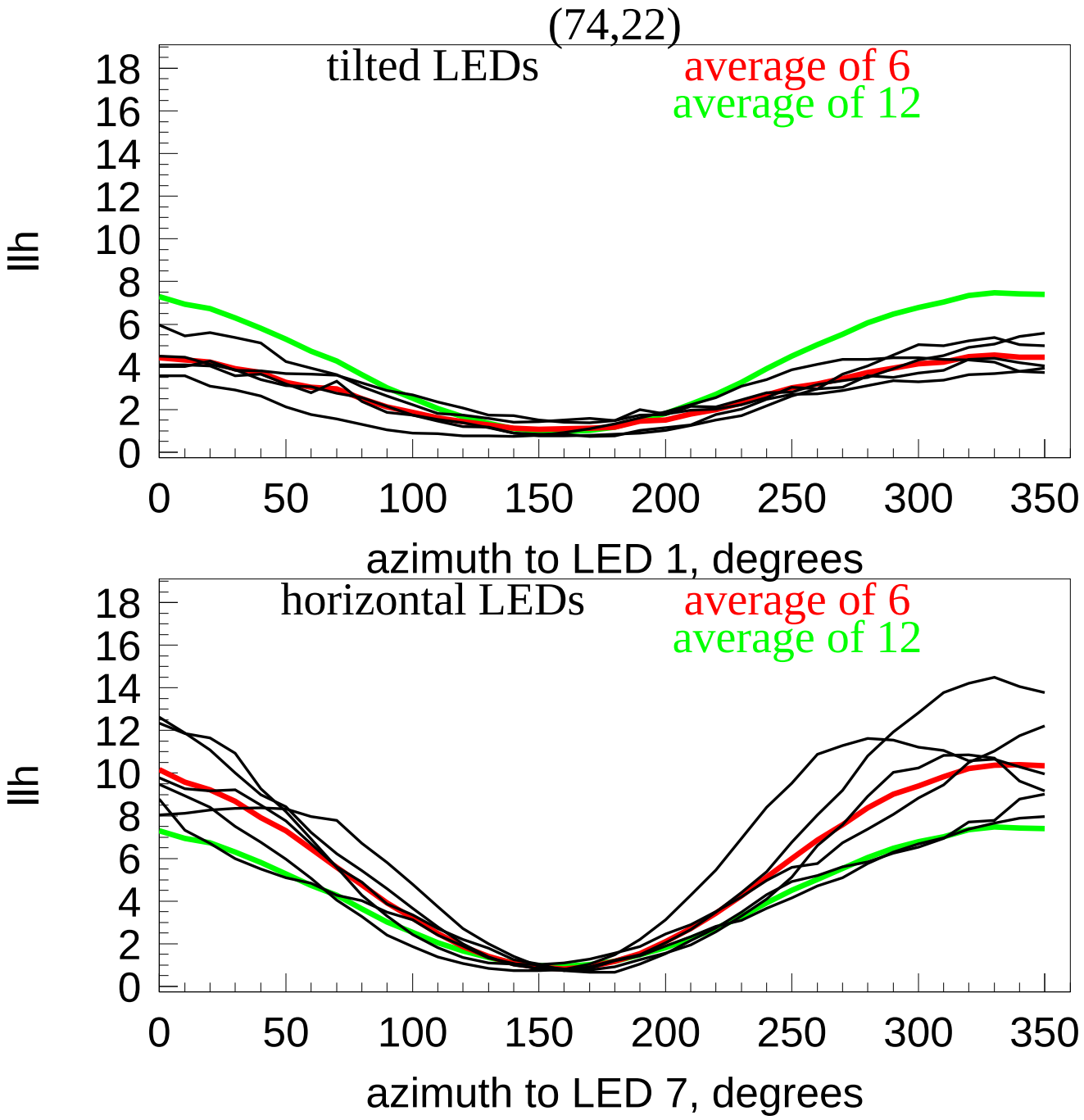

(73,57)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
200
1
2
3
4
5
6
7
8
9
10
11
12

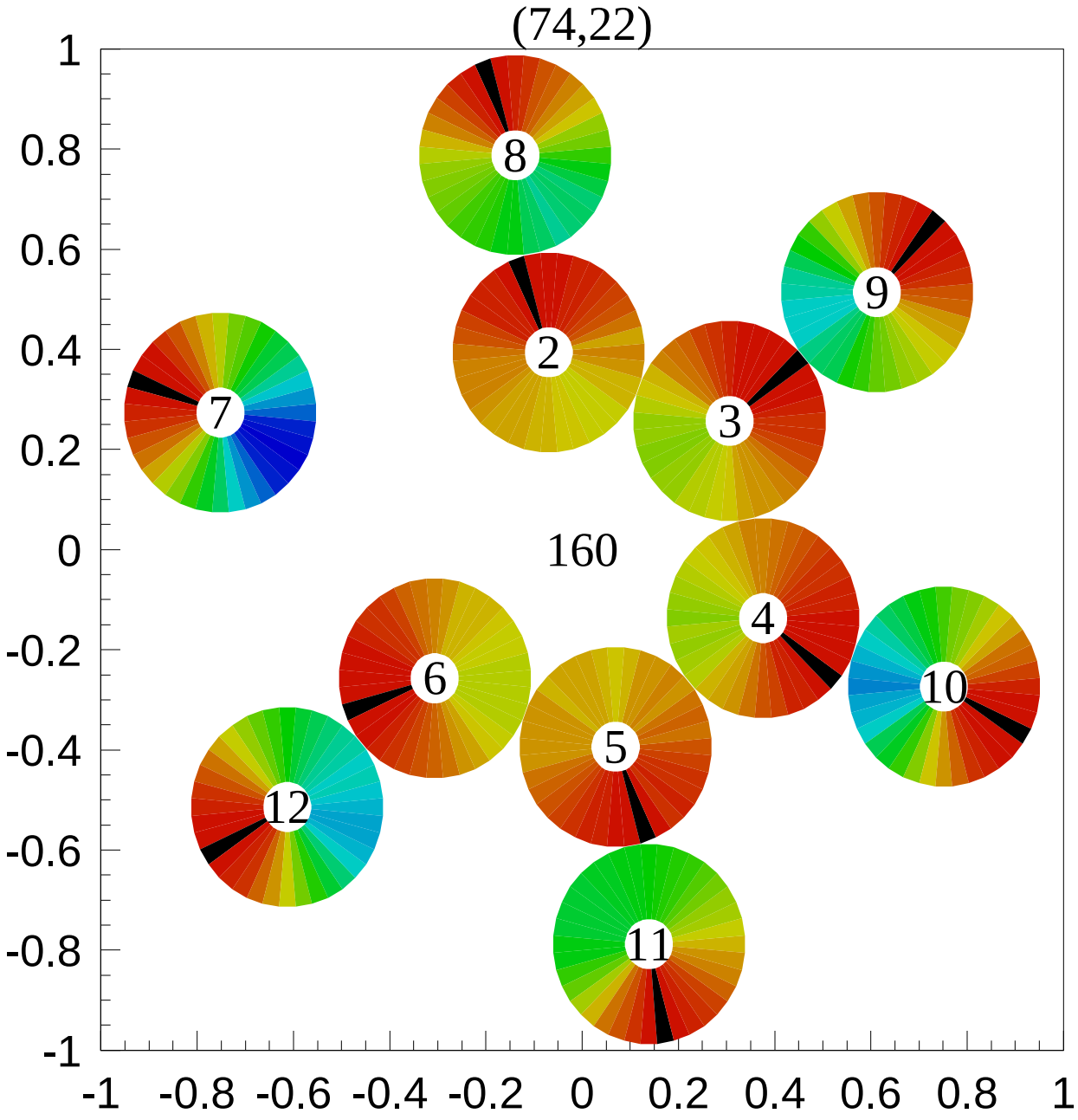

(74,1)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

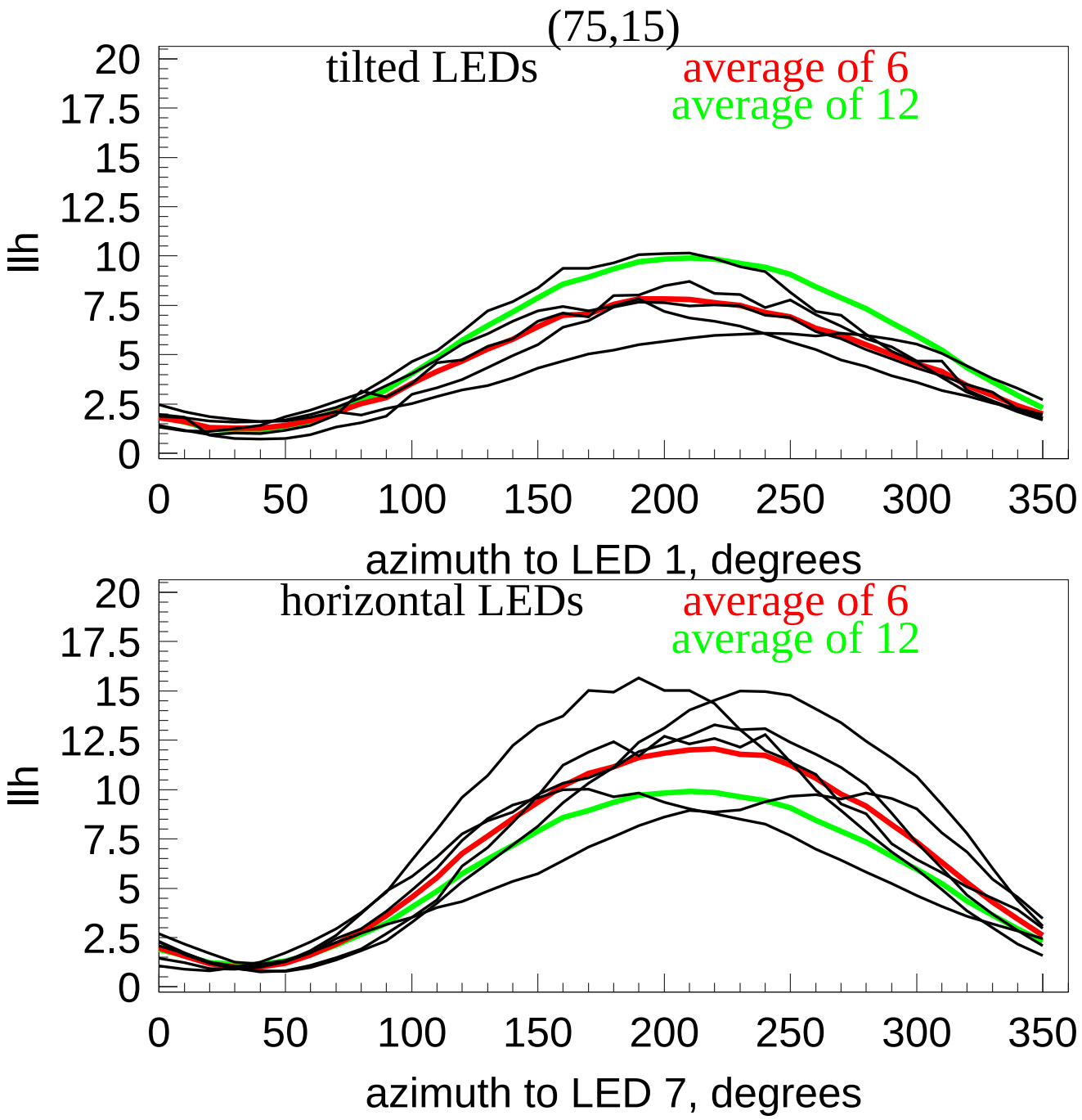

(74,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
9
4
3
11
5
260
2
8
6
1
12
7

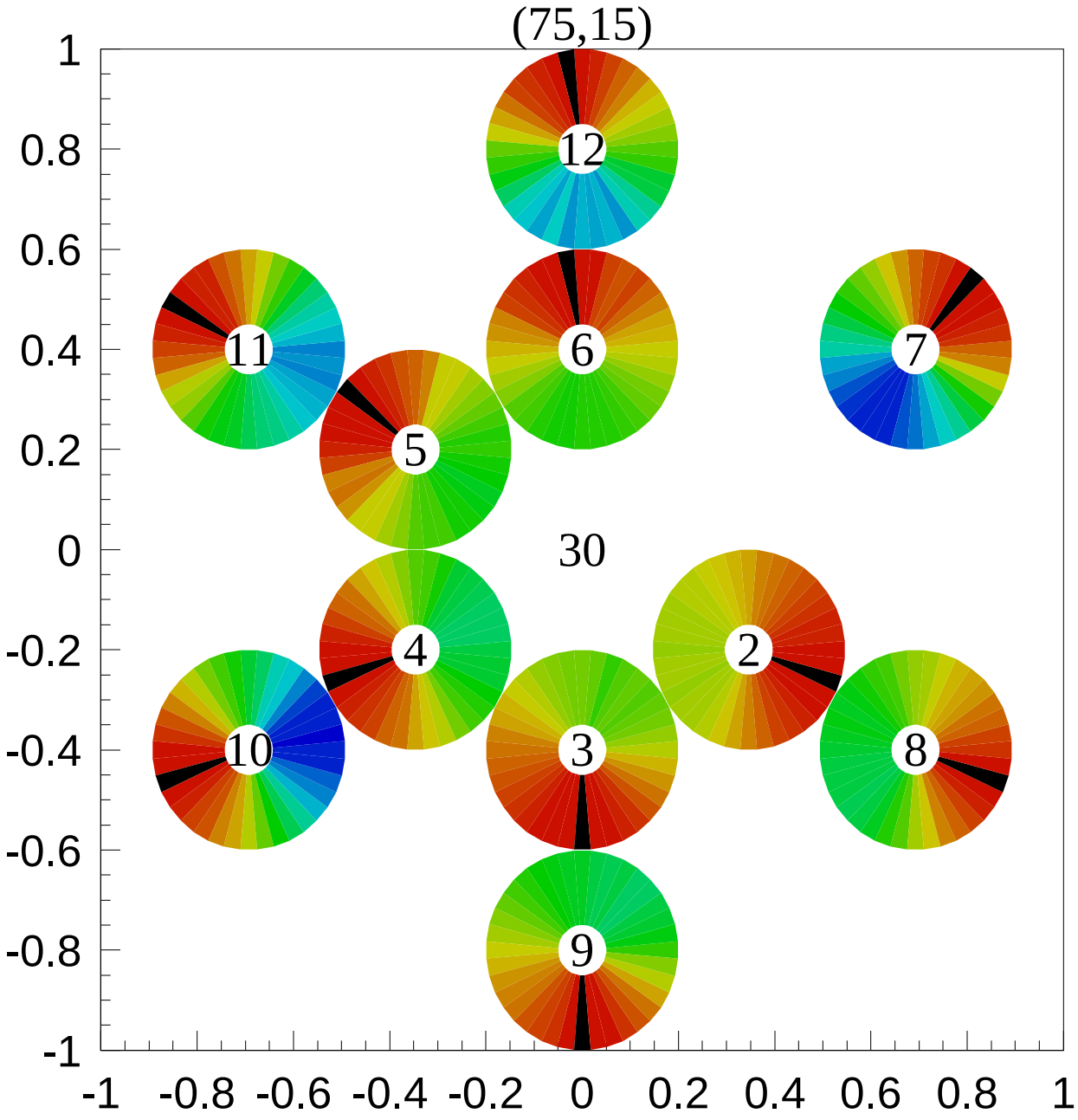

(74,6)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

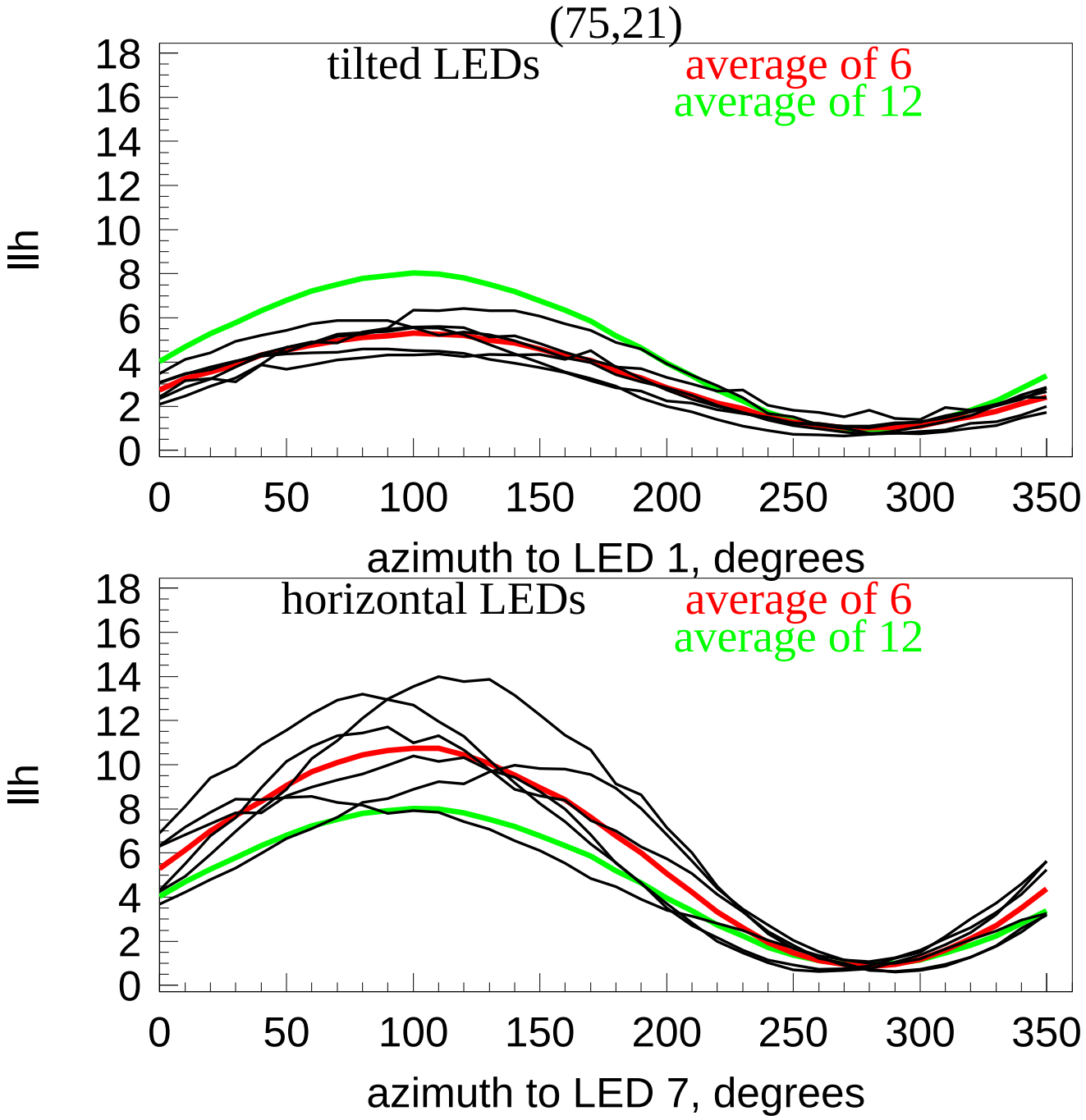

(74,6)
280
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

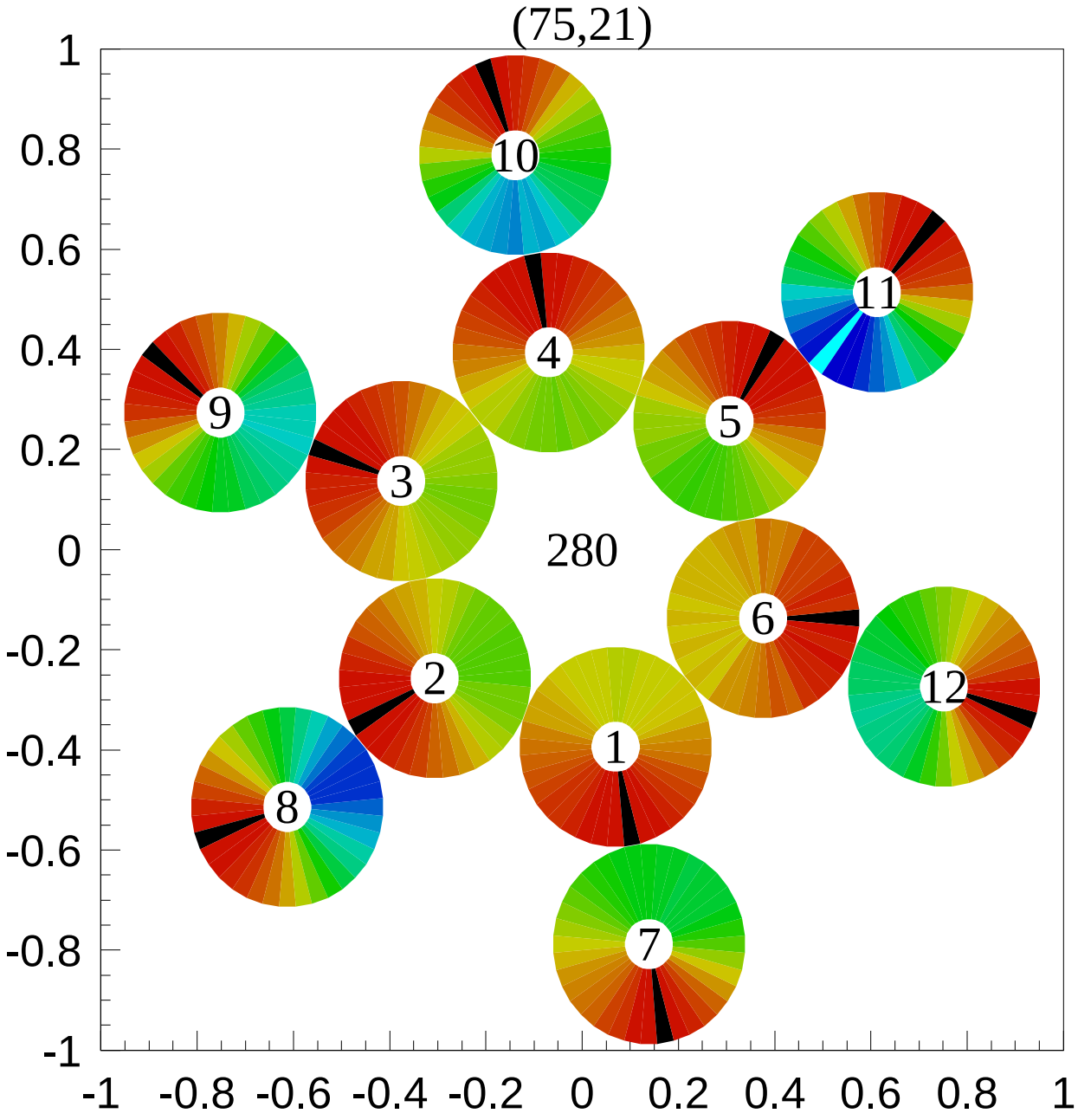

(74,22)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

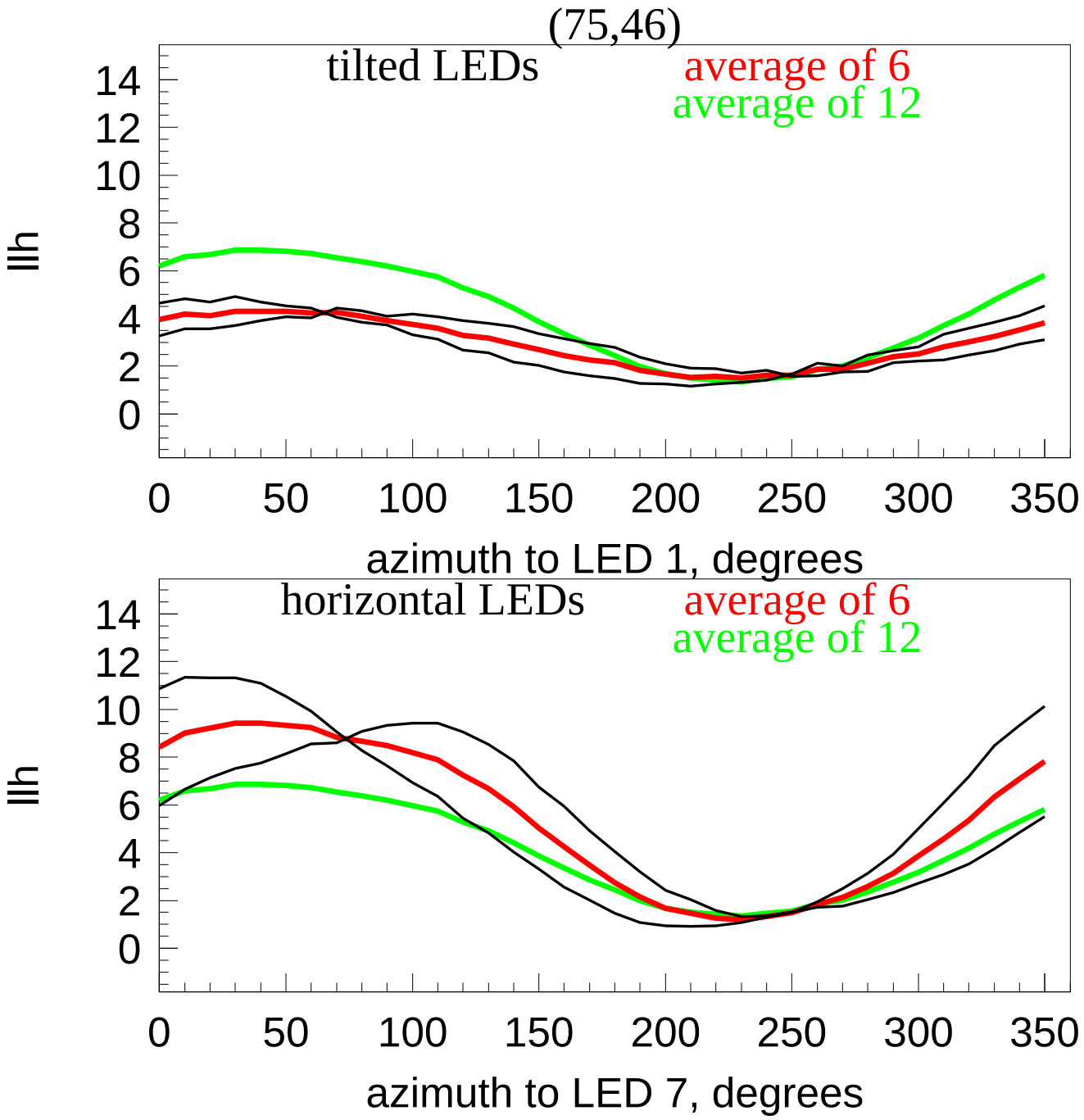

(74,22)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
2
9
7
3
160
4
6
10
5
12
11

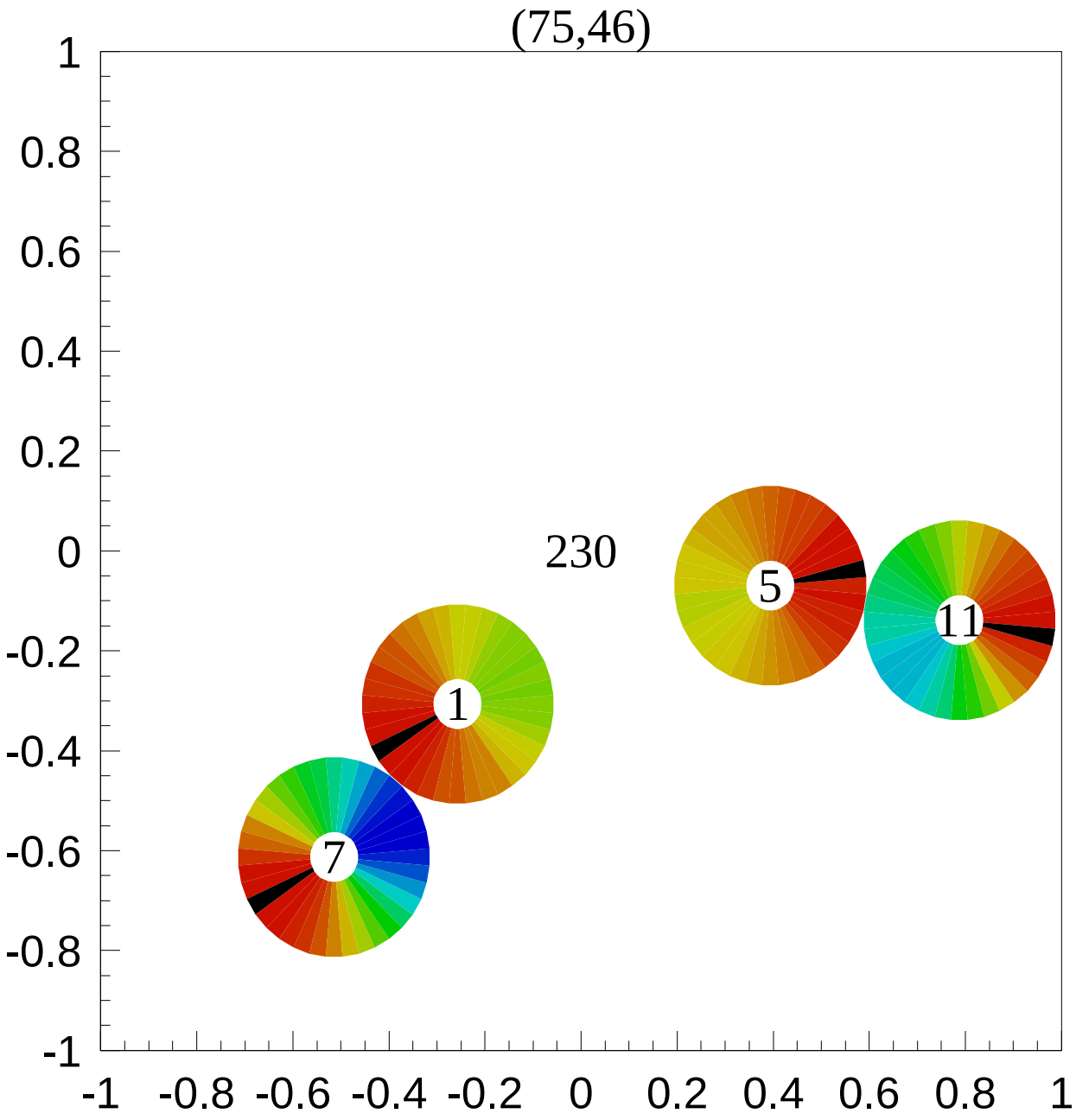

(75,15)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

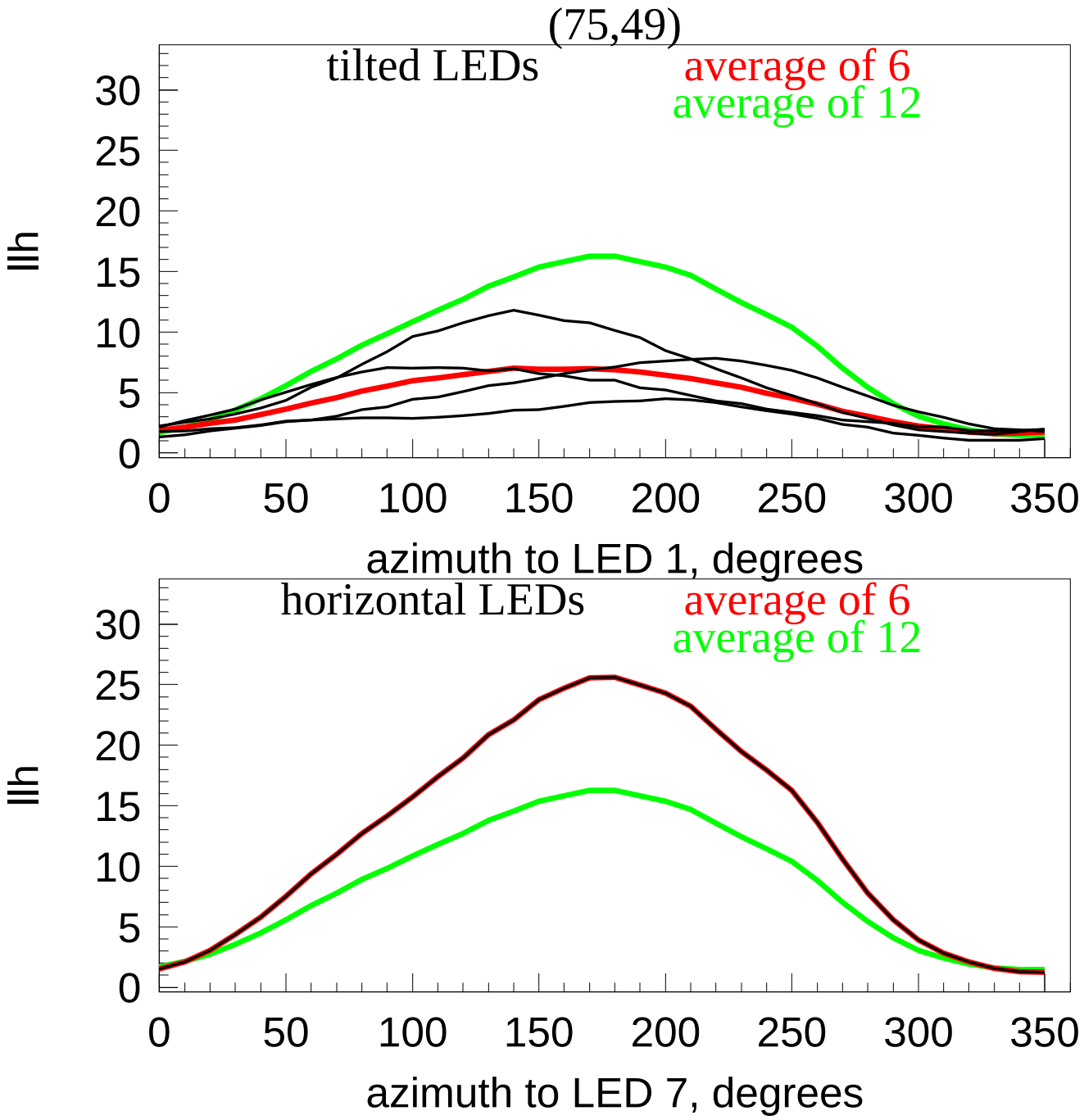

(75,15)
12
11
6
7
5
30
4
2
10
3
8
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

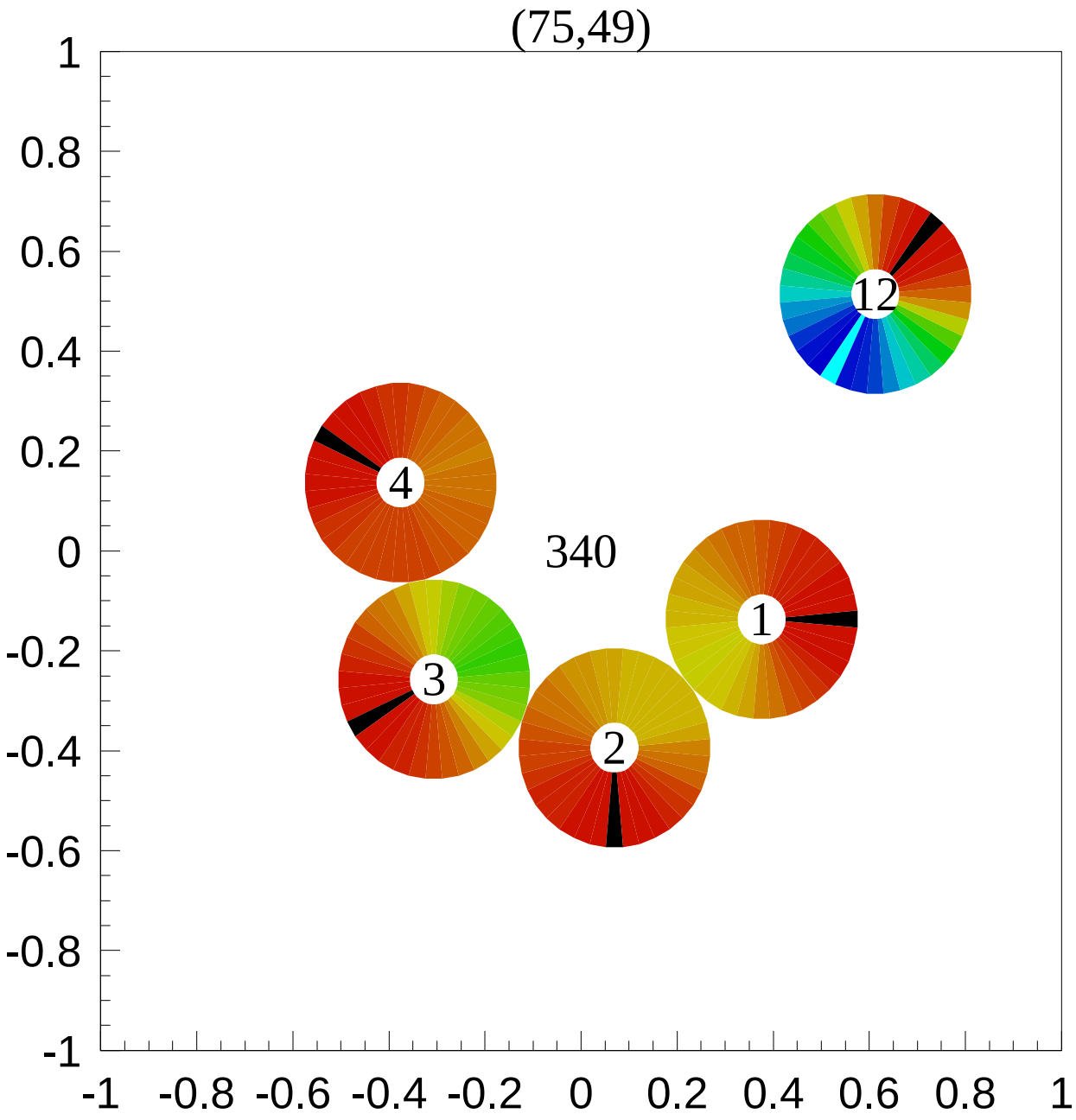

(75,21)
tilted LEDs
average of 6
average of 12
Ilh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

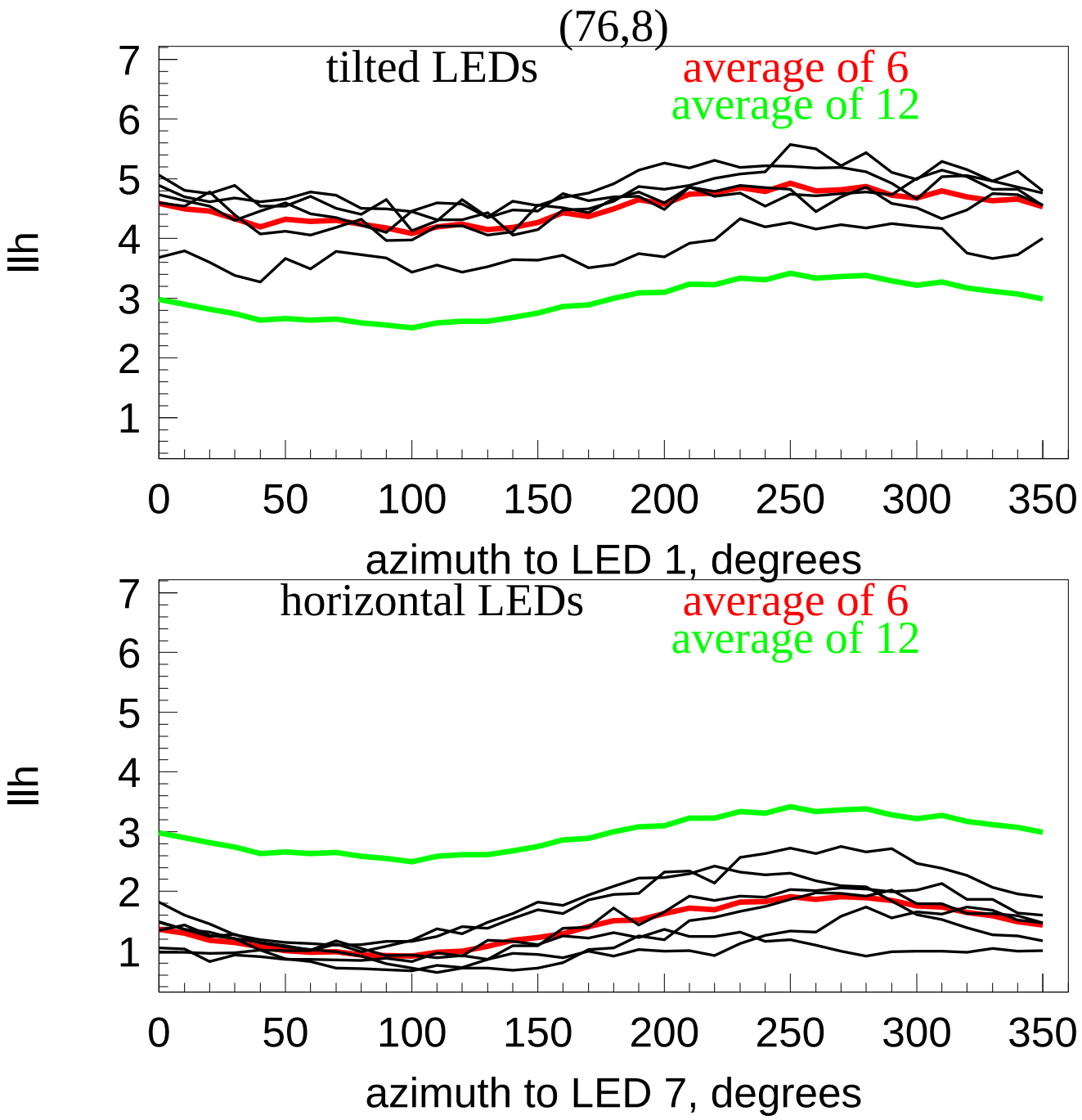

(75,21)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
10
11
4
9
5
3
280
6
12
2
1
8
7

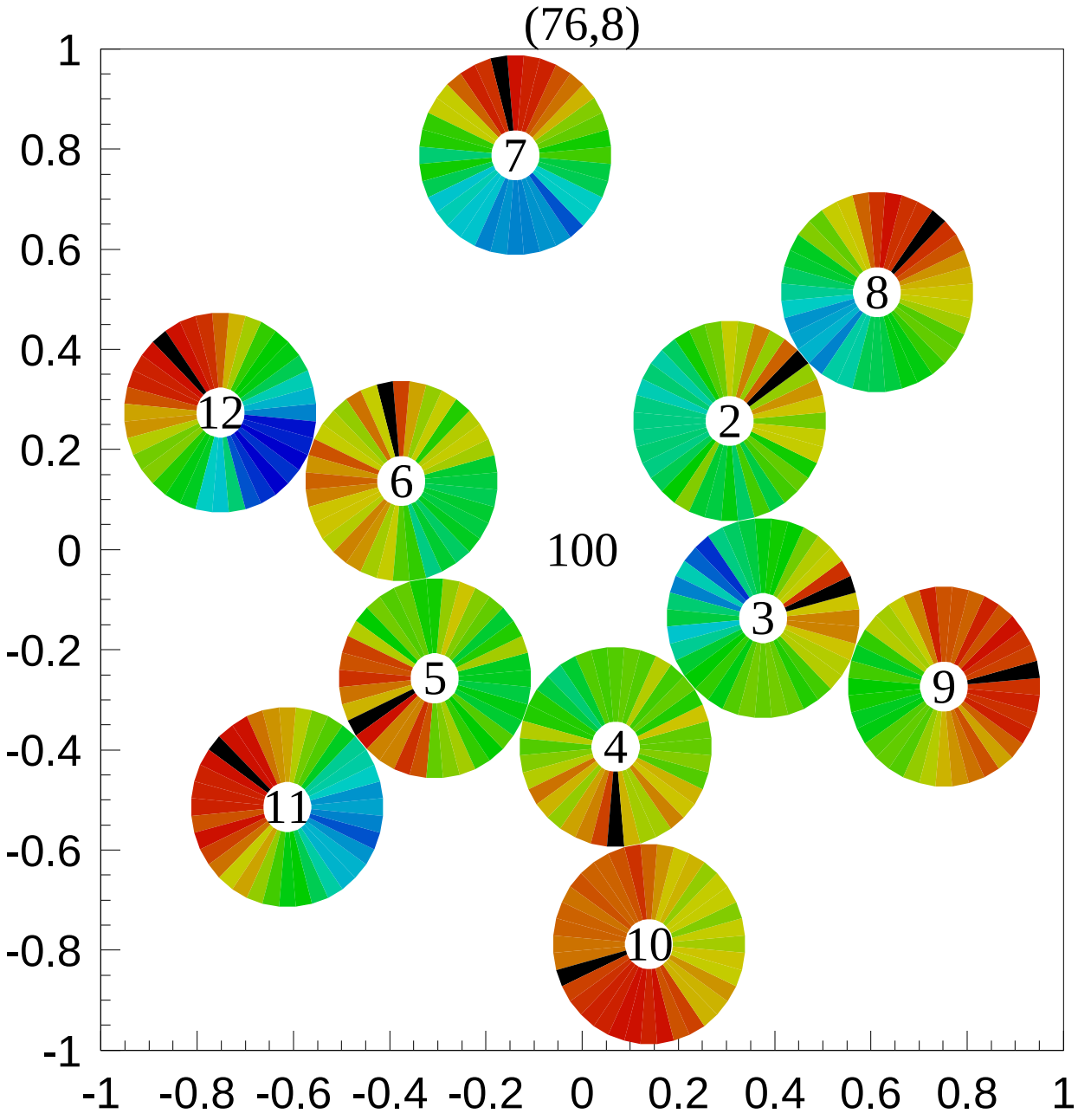

(75,46)
tilted LEDs
average of 6
average of 12
llh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

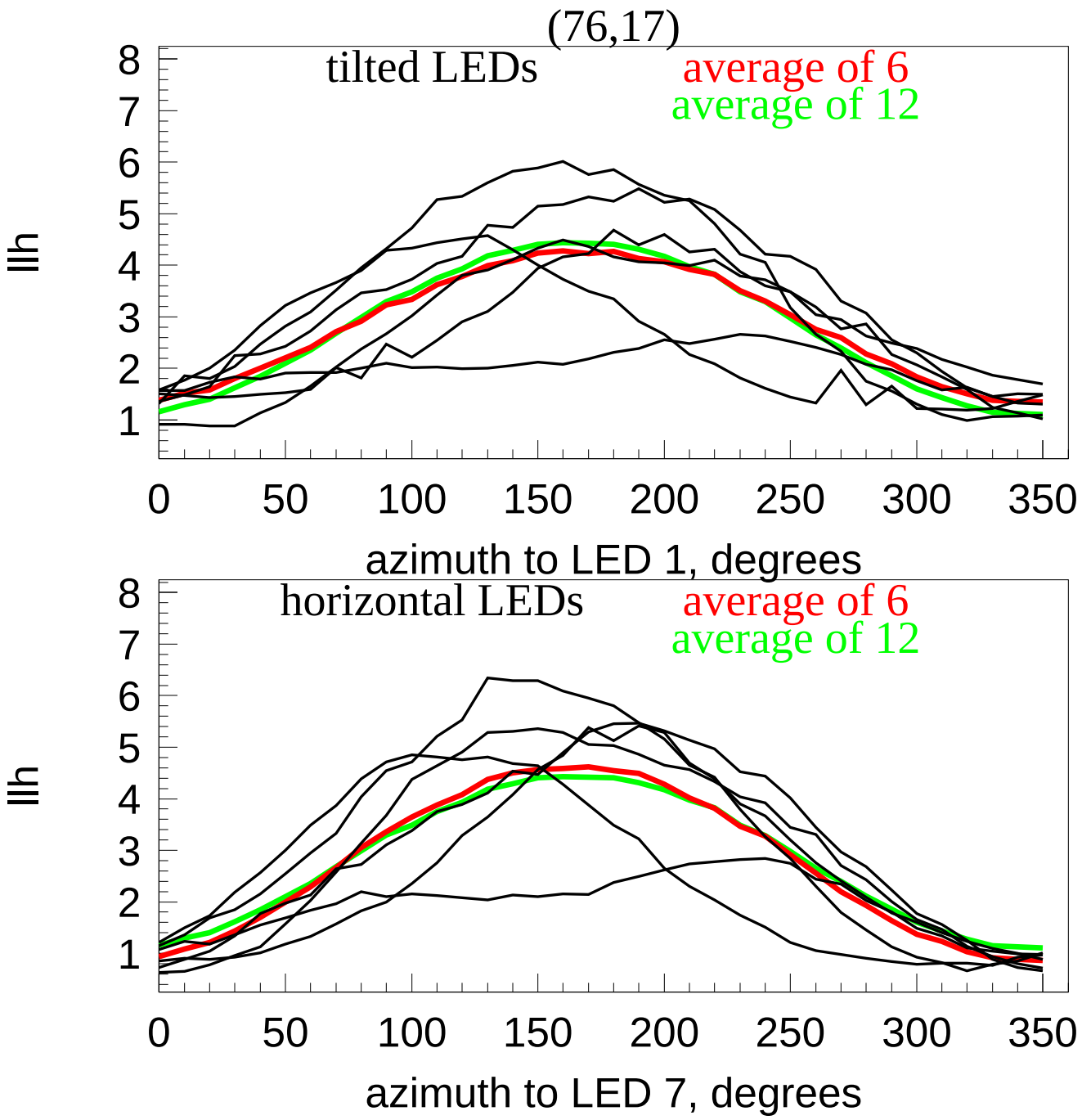

(75,46)
230
1
5
11
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

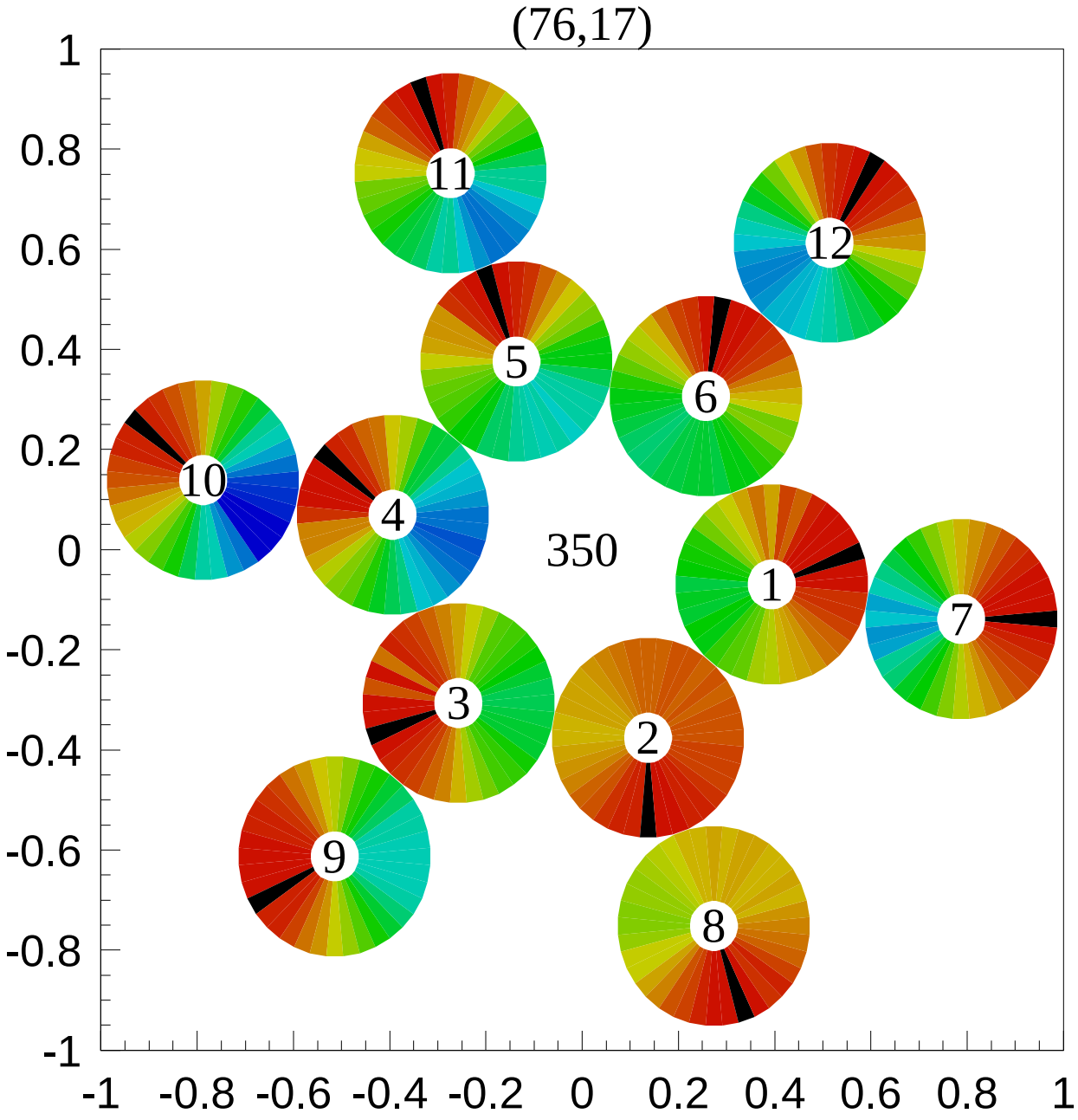

(75,49)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

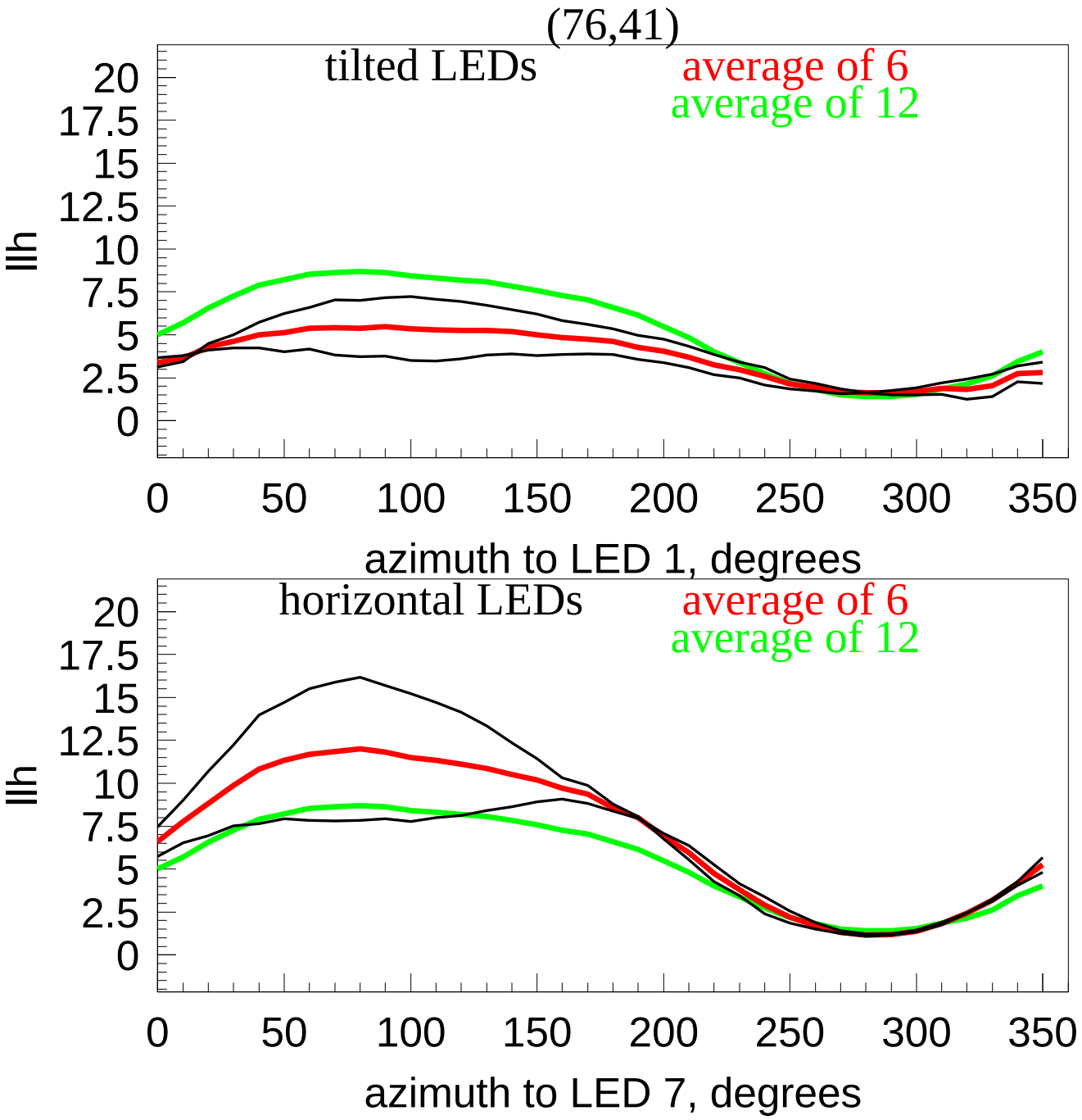

(75,49)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
4
340
1
3
2

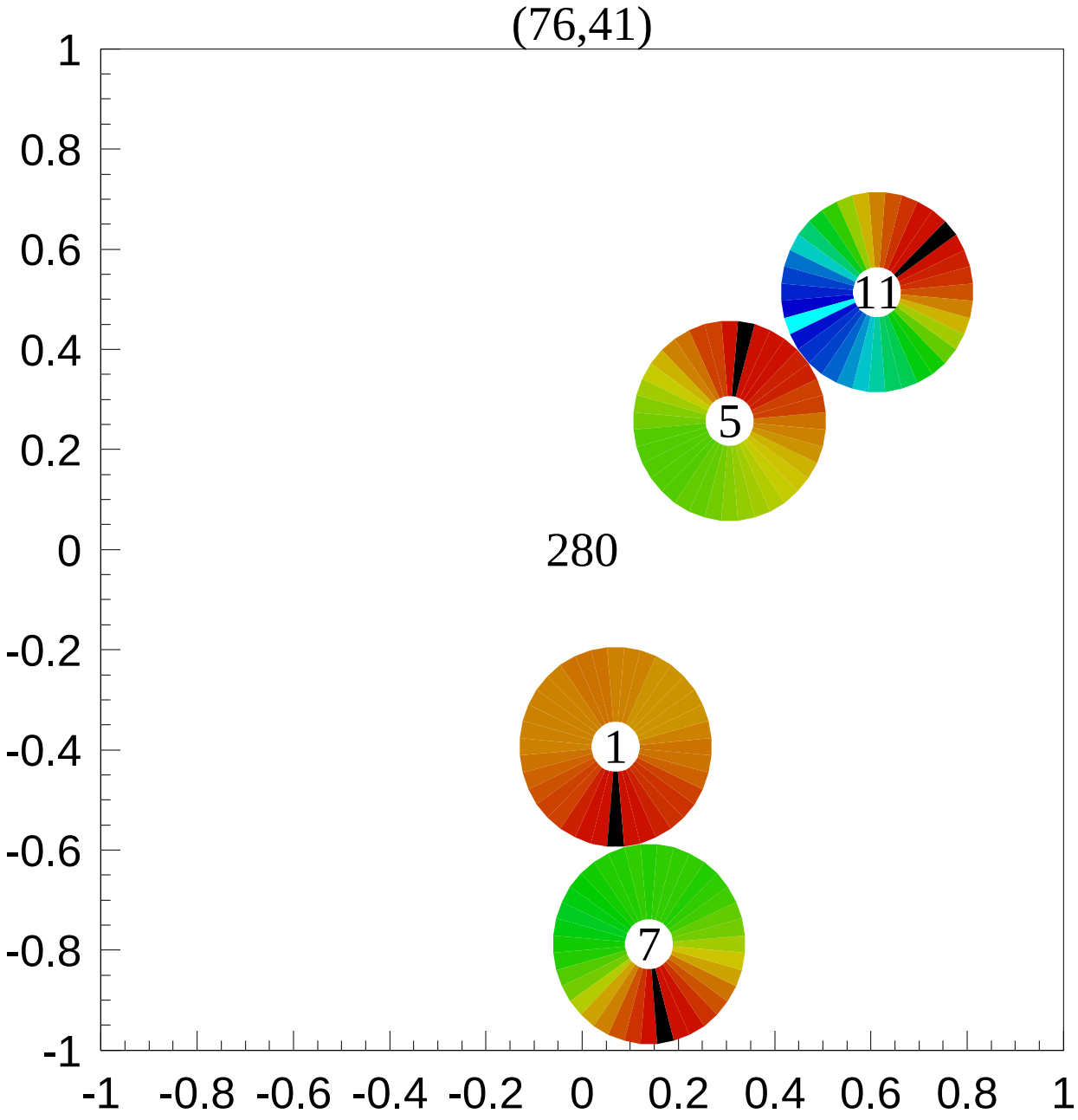

(76,8)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

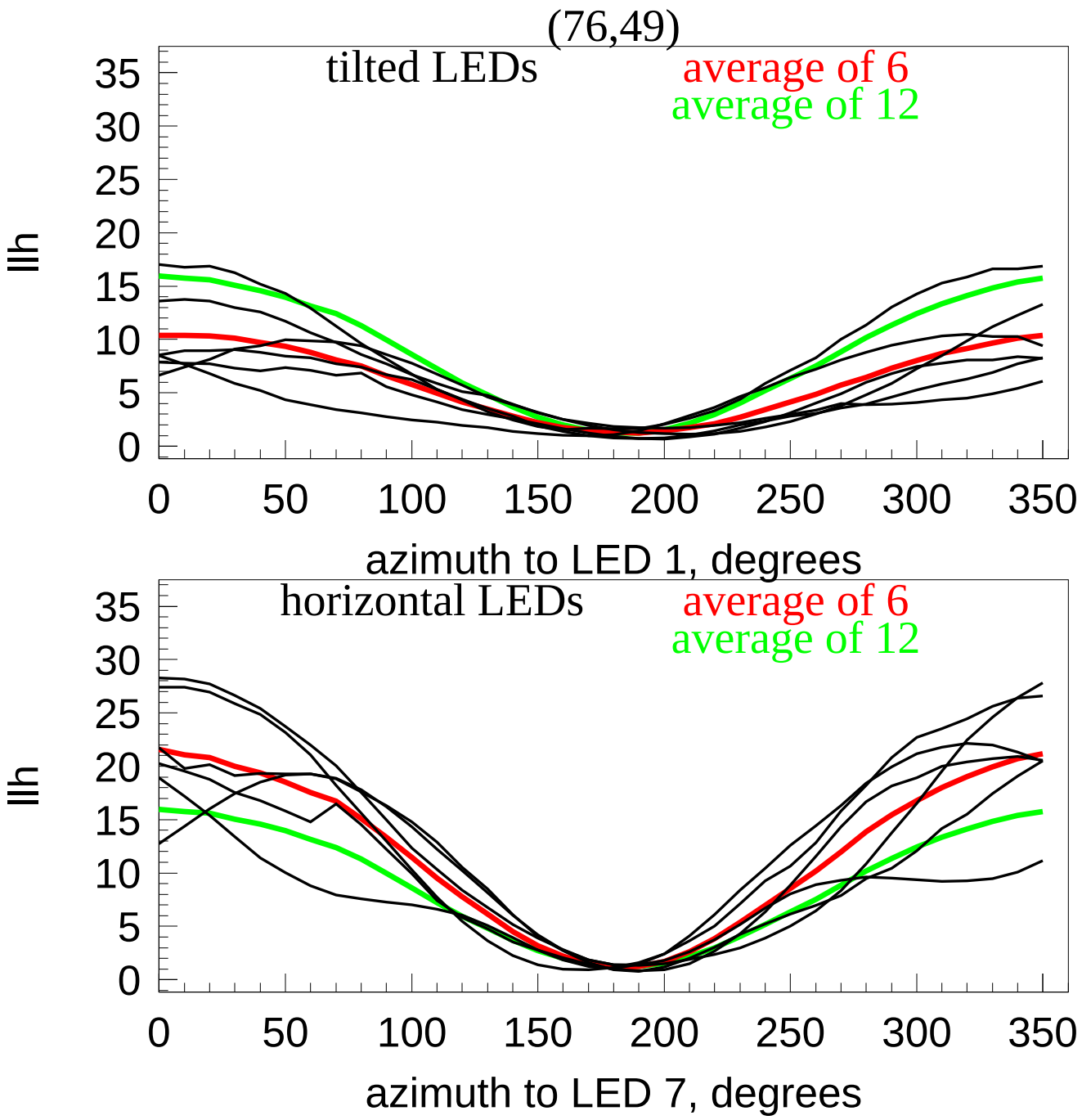

(76,8)
7
8
12
2
6
100
3
9
5
4
11
10
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

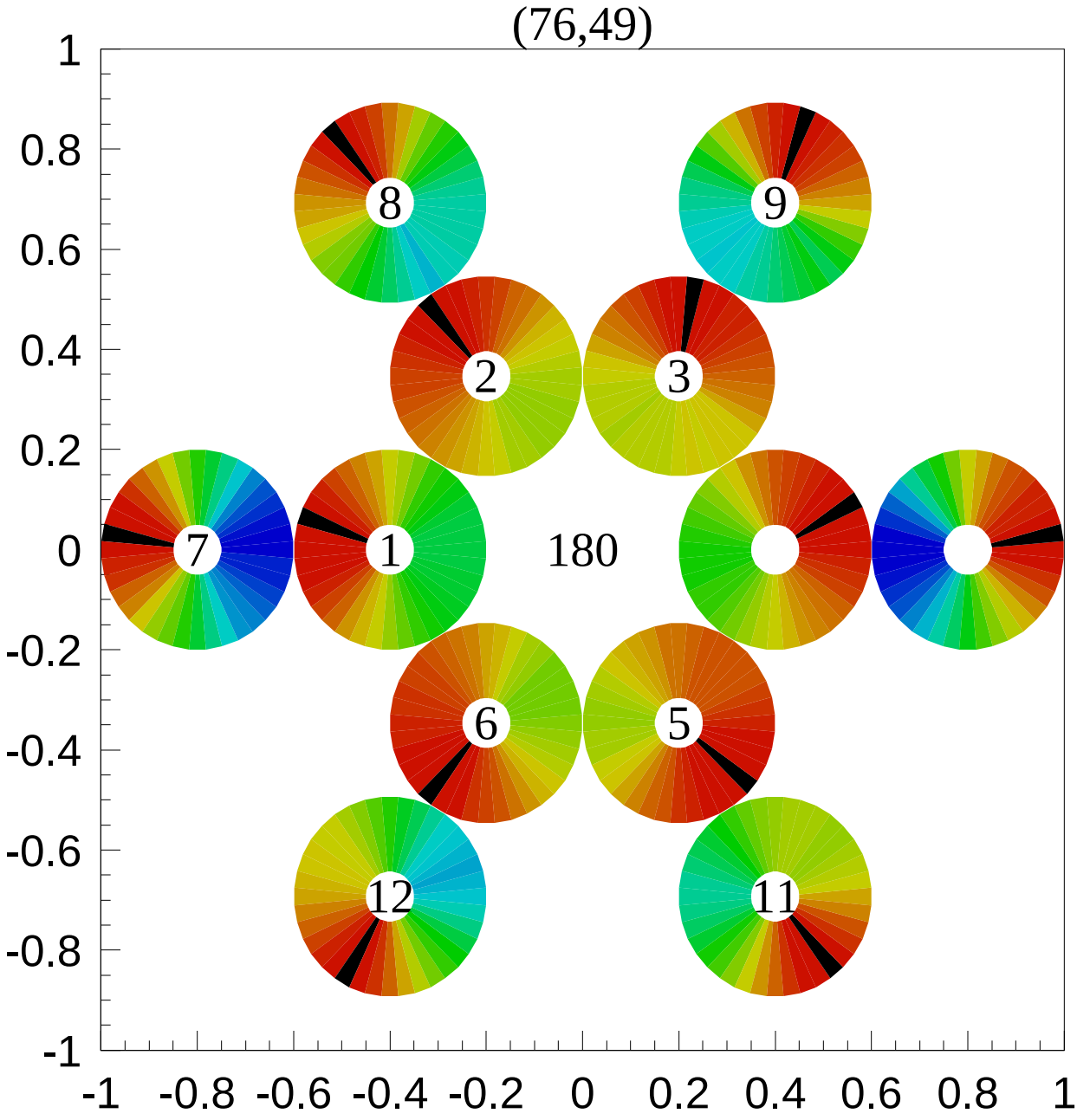

(76,17)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

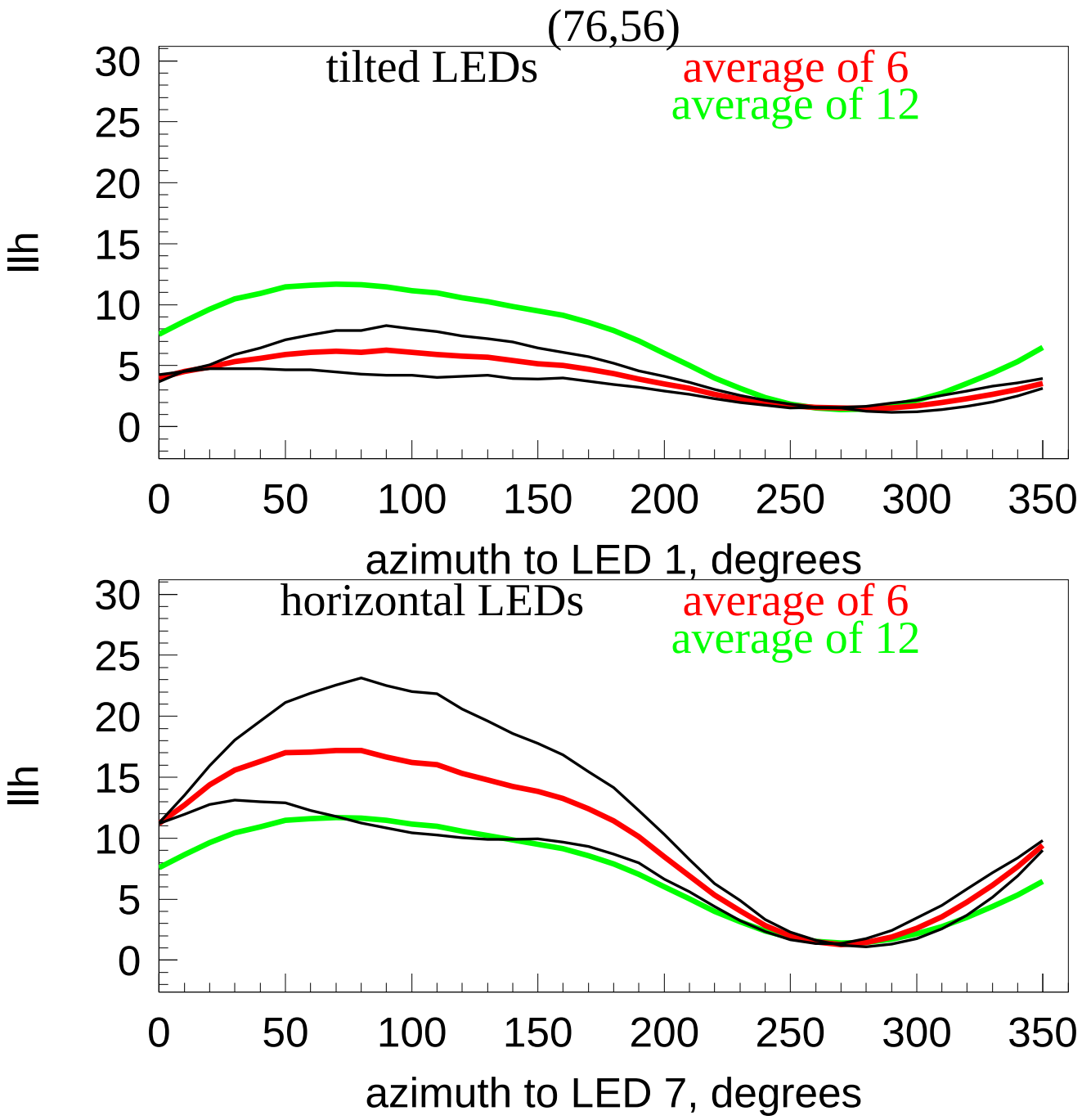

(76,17)
350
1
2
3
4
5
6
7
8
9
10
11
12
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

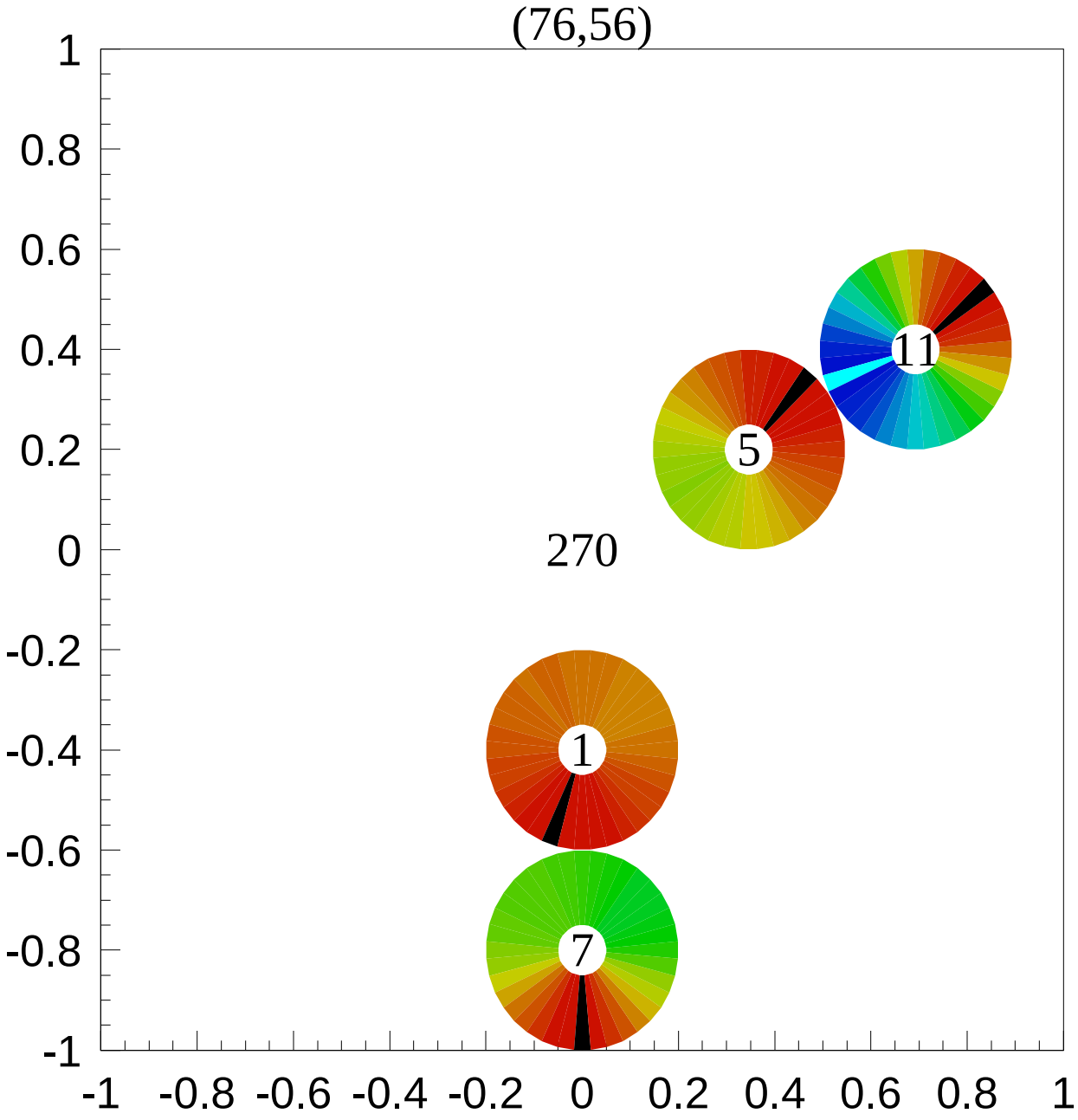

(76,41)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

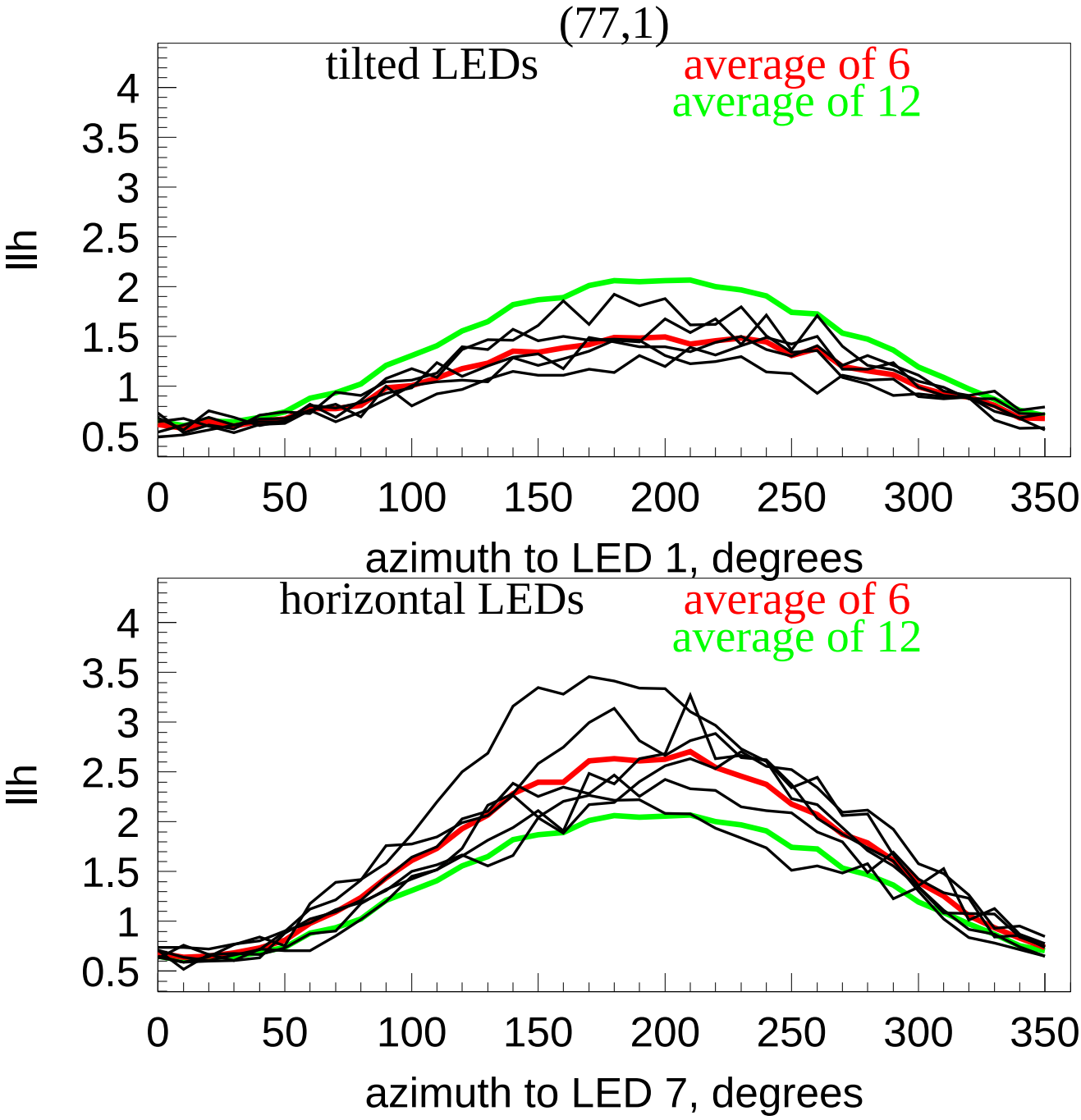

(76,41)
11
5
280
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

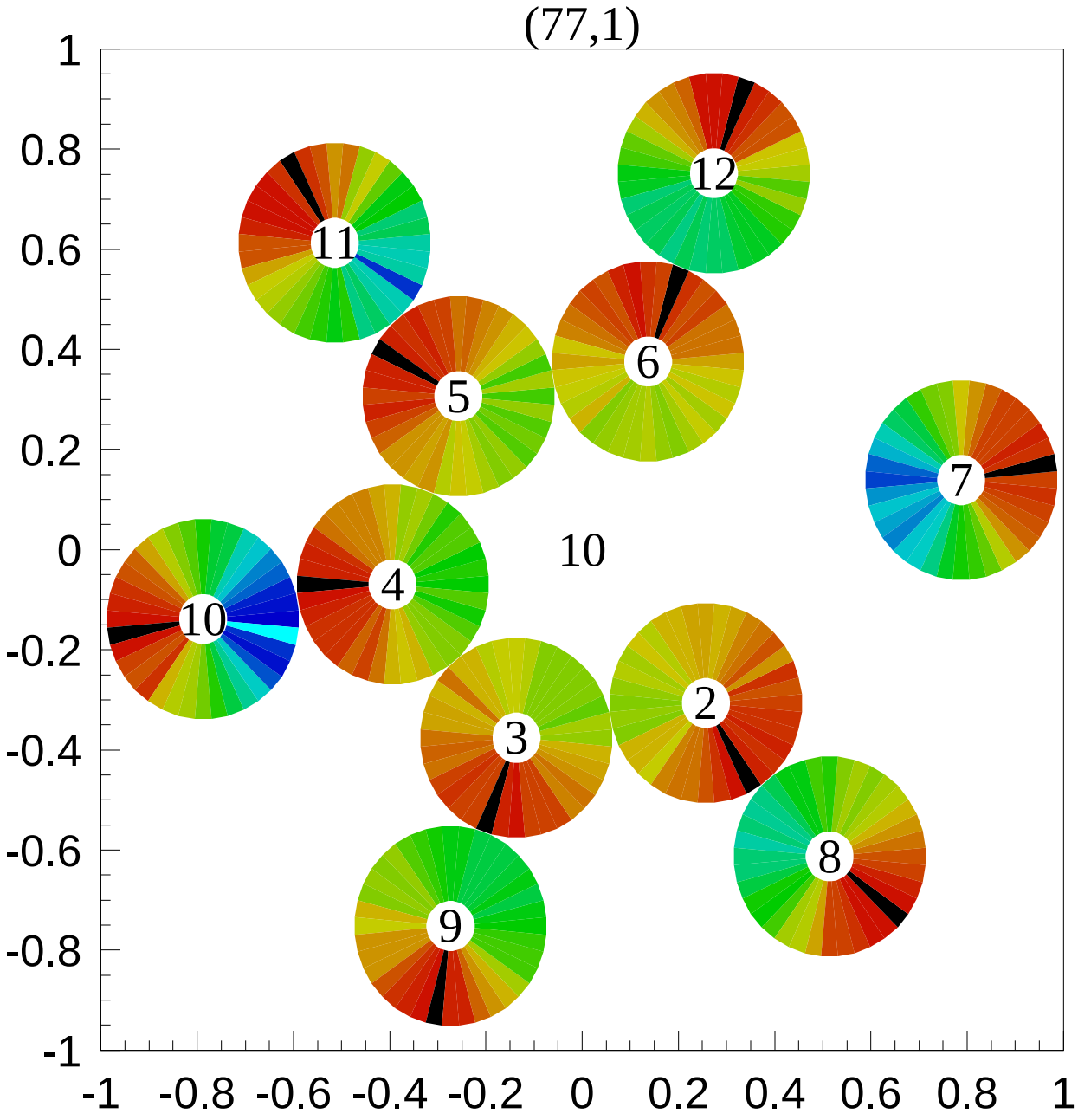

(76,49)
tilted LEDs
average of 6
average of 12
llh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
35
30
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

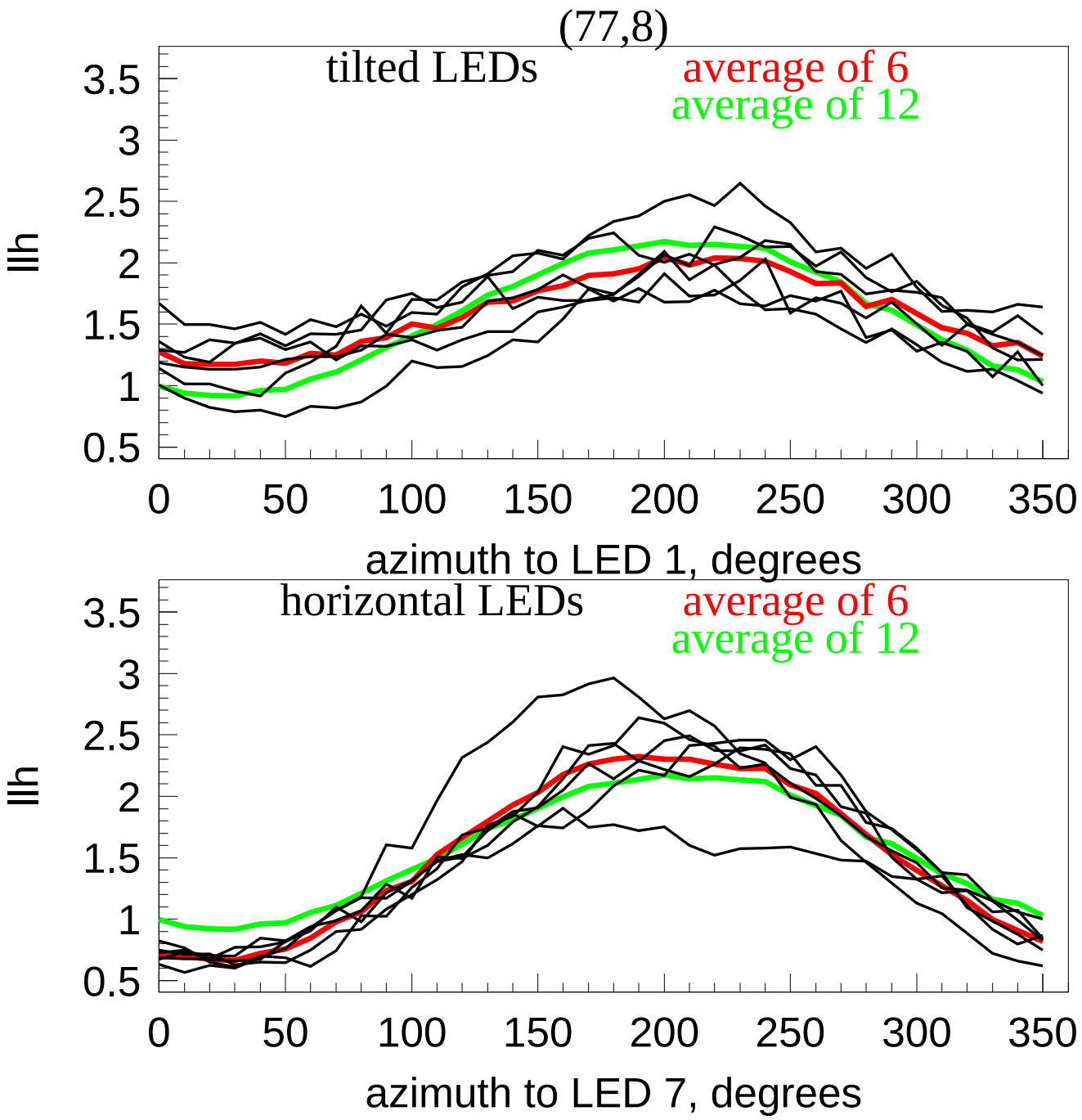

(76,49)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
9
2
3
7
1
180
6
5
12
11

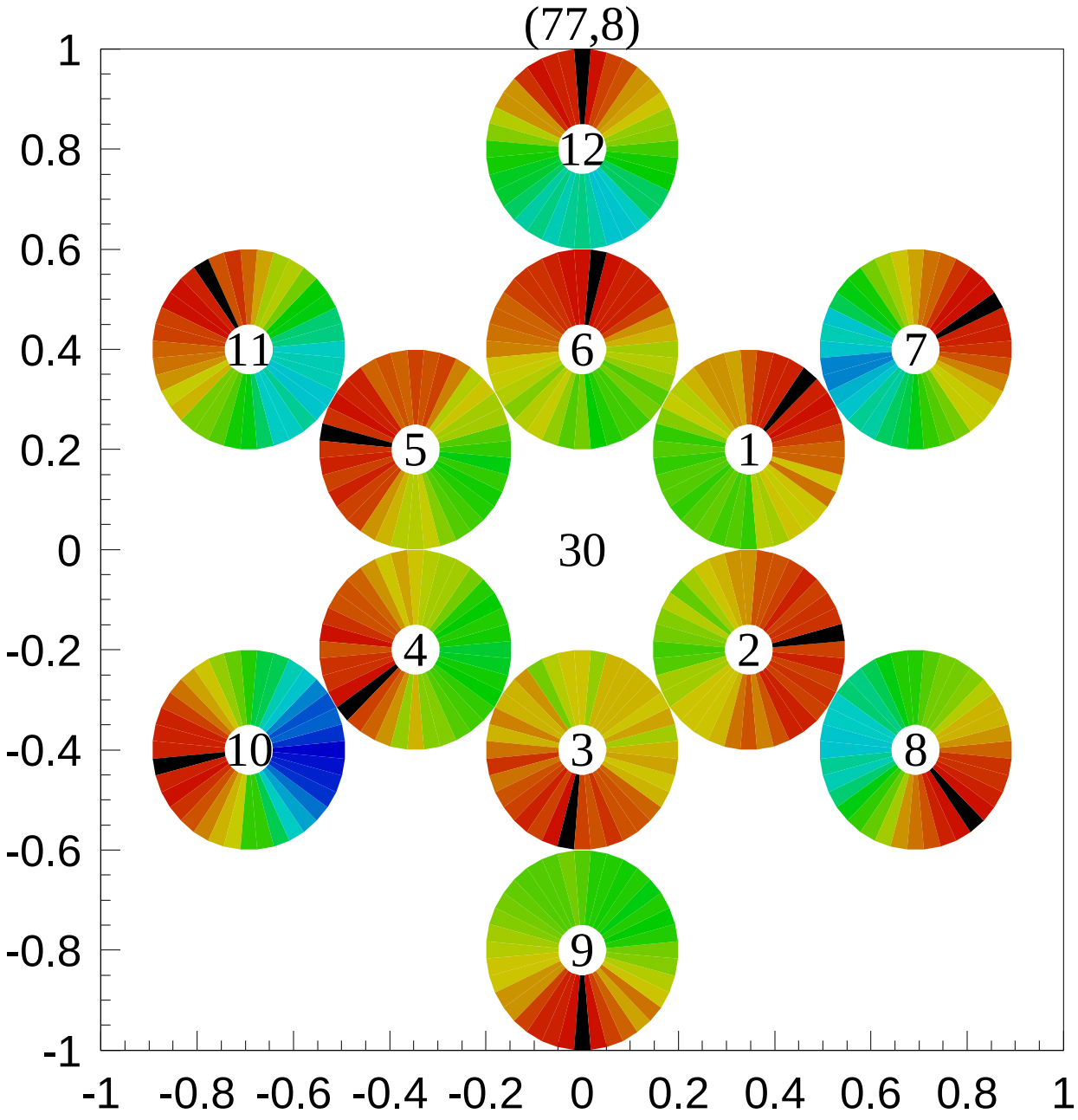

(76,56)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

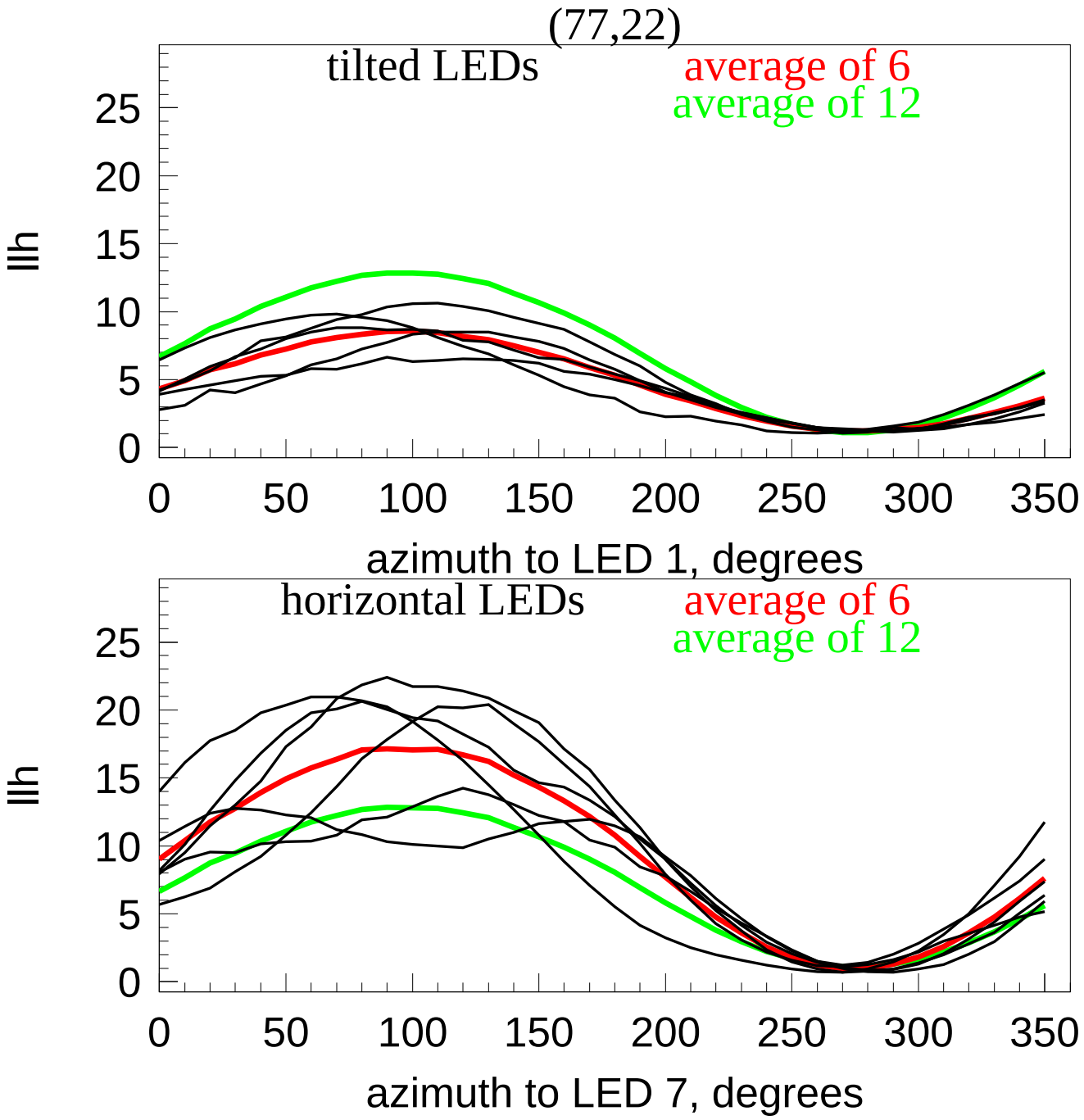

(76,56)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
5
270
1
7

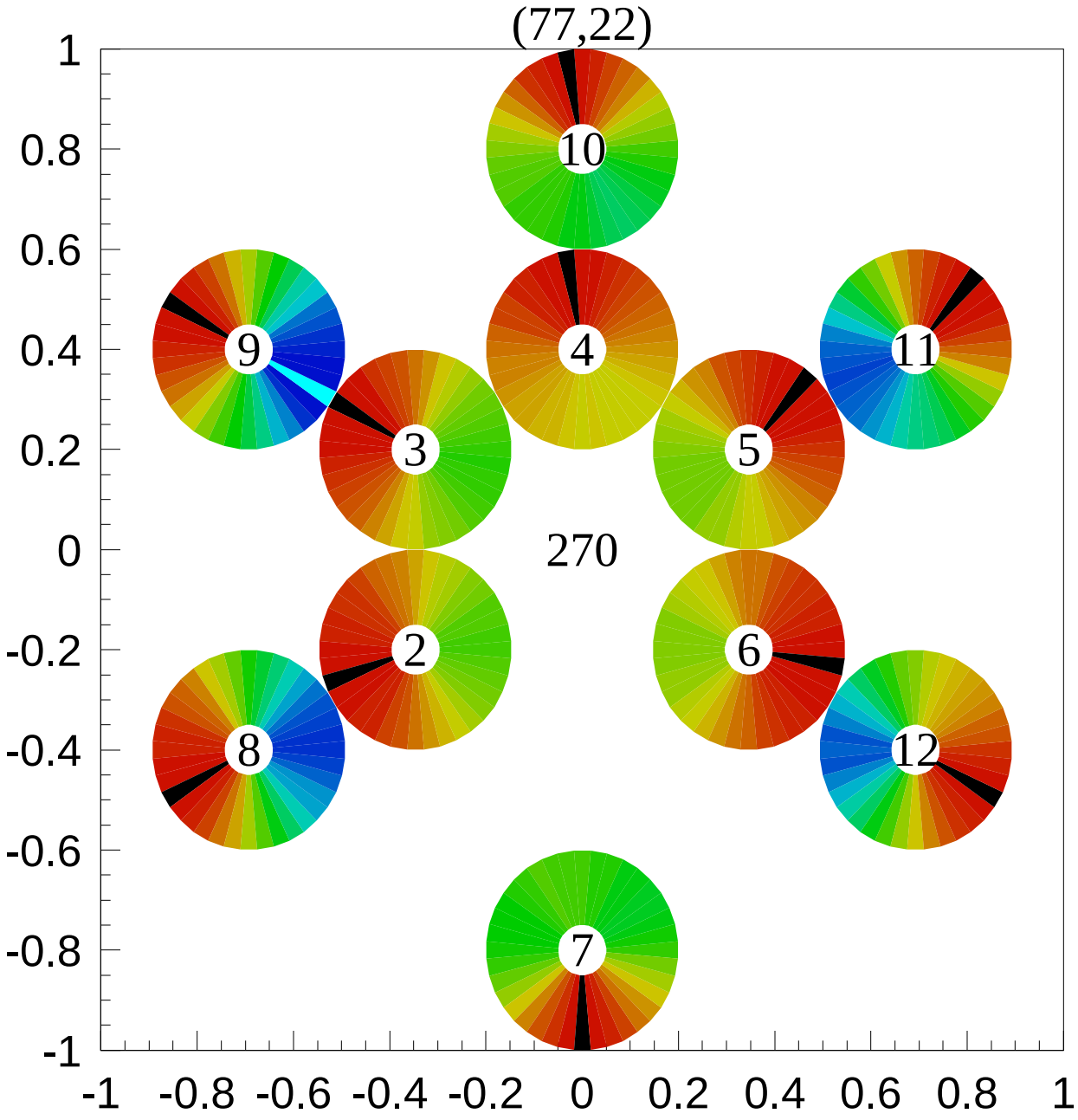

(77,1)
tilted LEDs
average of 6
average of 12
llh
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
4
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

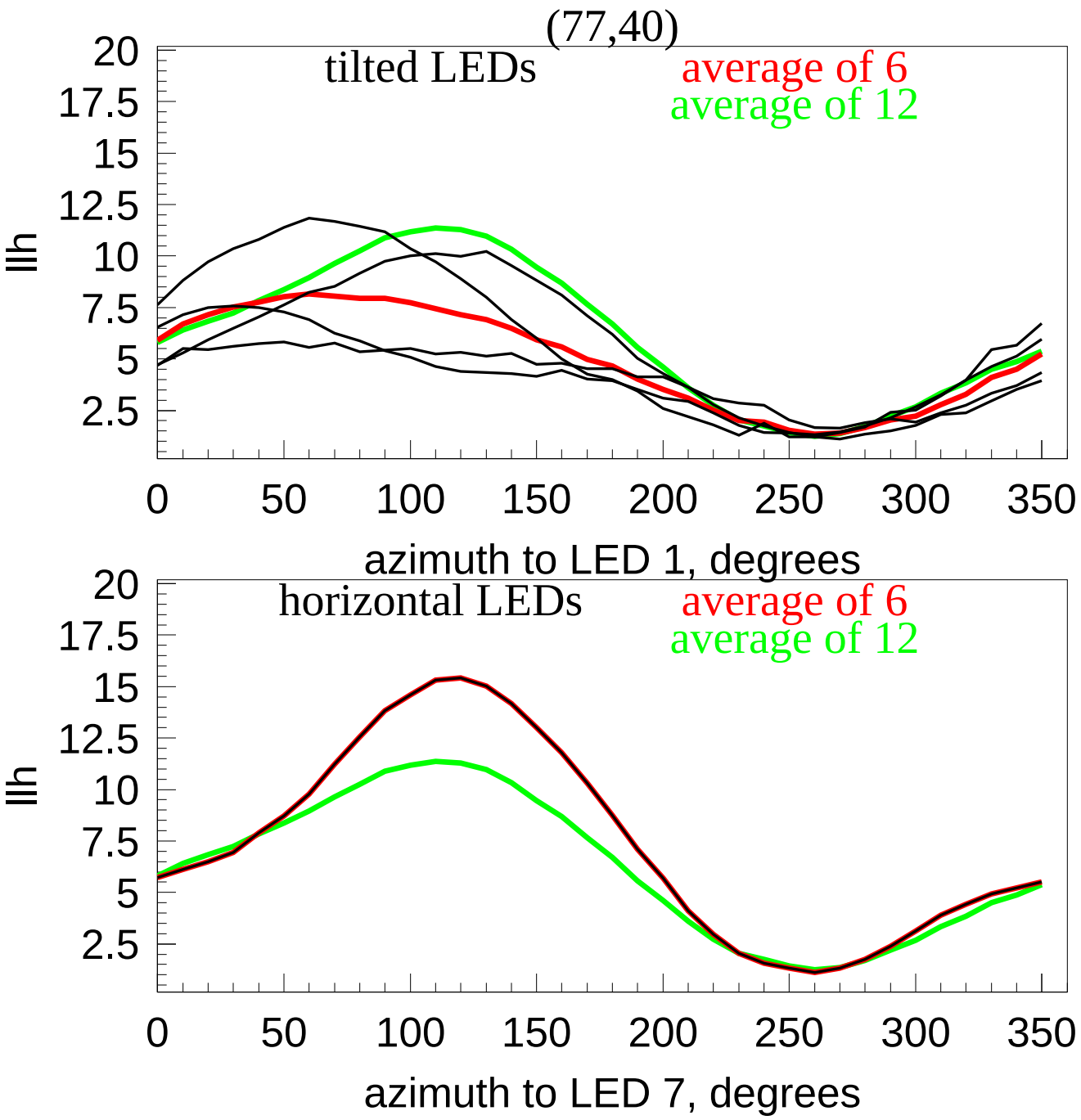

(77,1)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
11
6
5
7
10
4
10
2
3
8
9

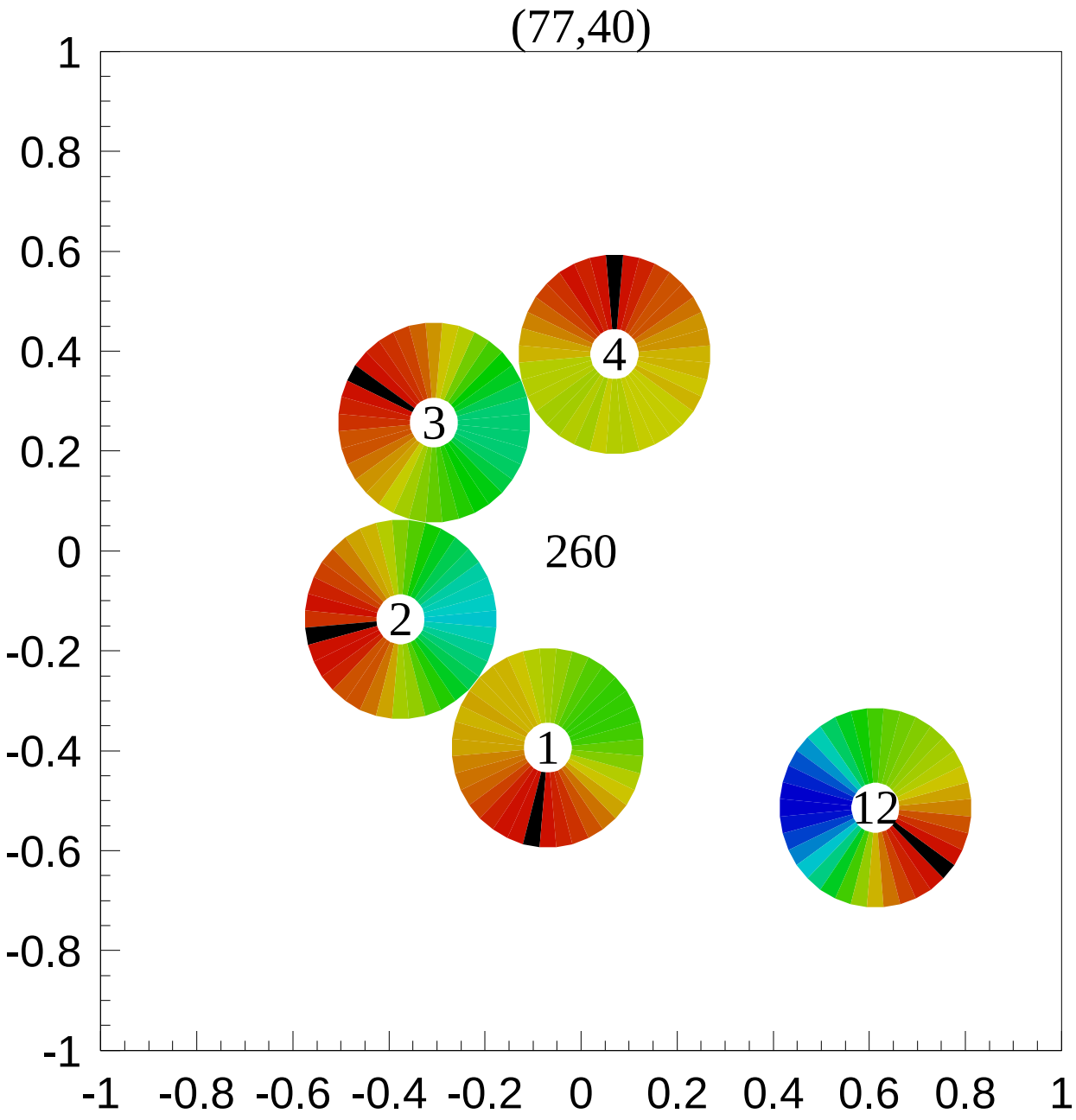

(77,8)
tilted LEDs
average of 6
average of 12
Ilh
3.5
3
2.5
2
1.5
1
0.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

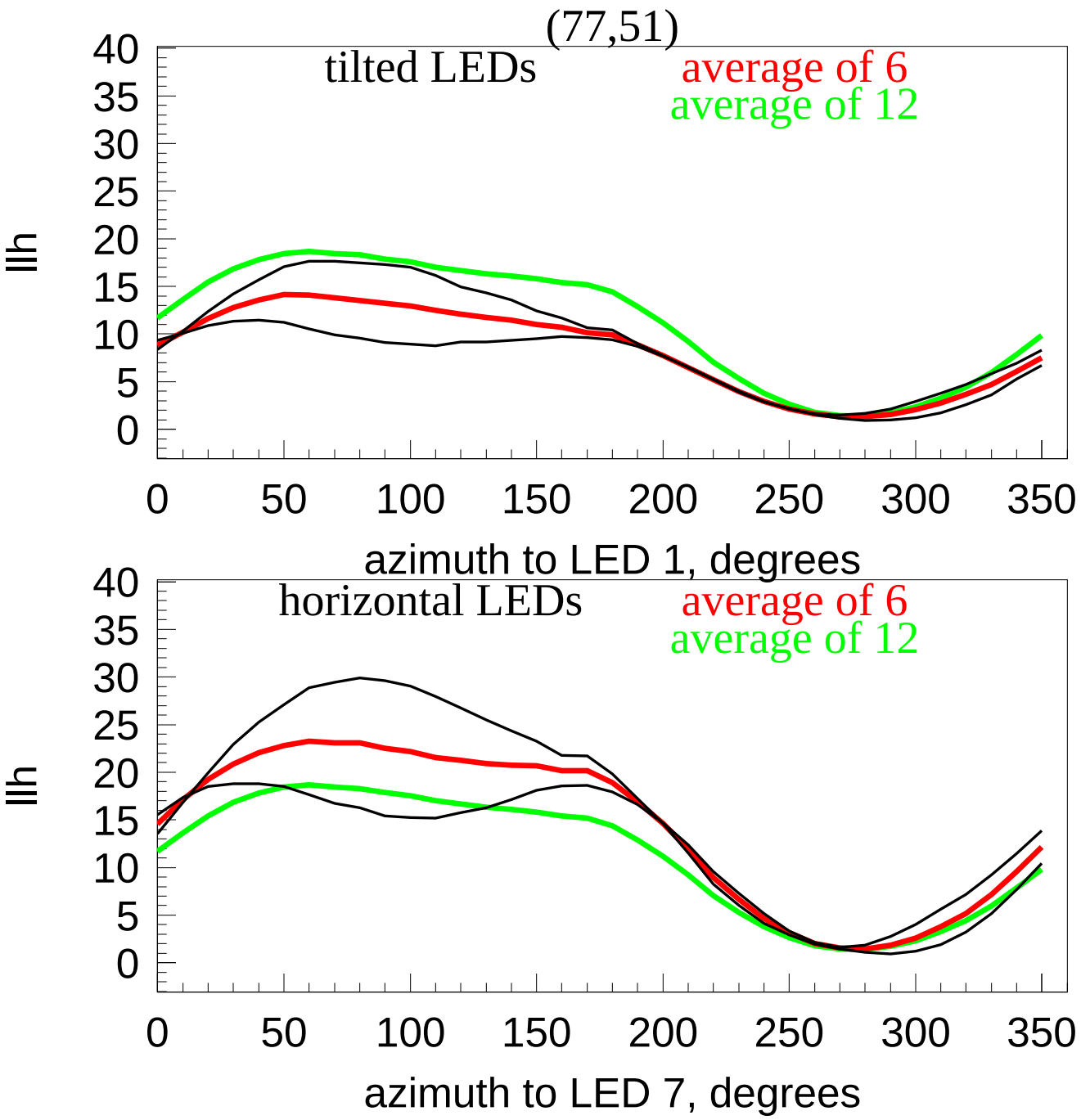

(77,8)
12
11
6
7
5
1
30
4
2
10
3
8
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

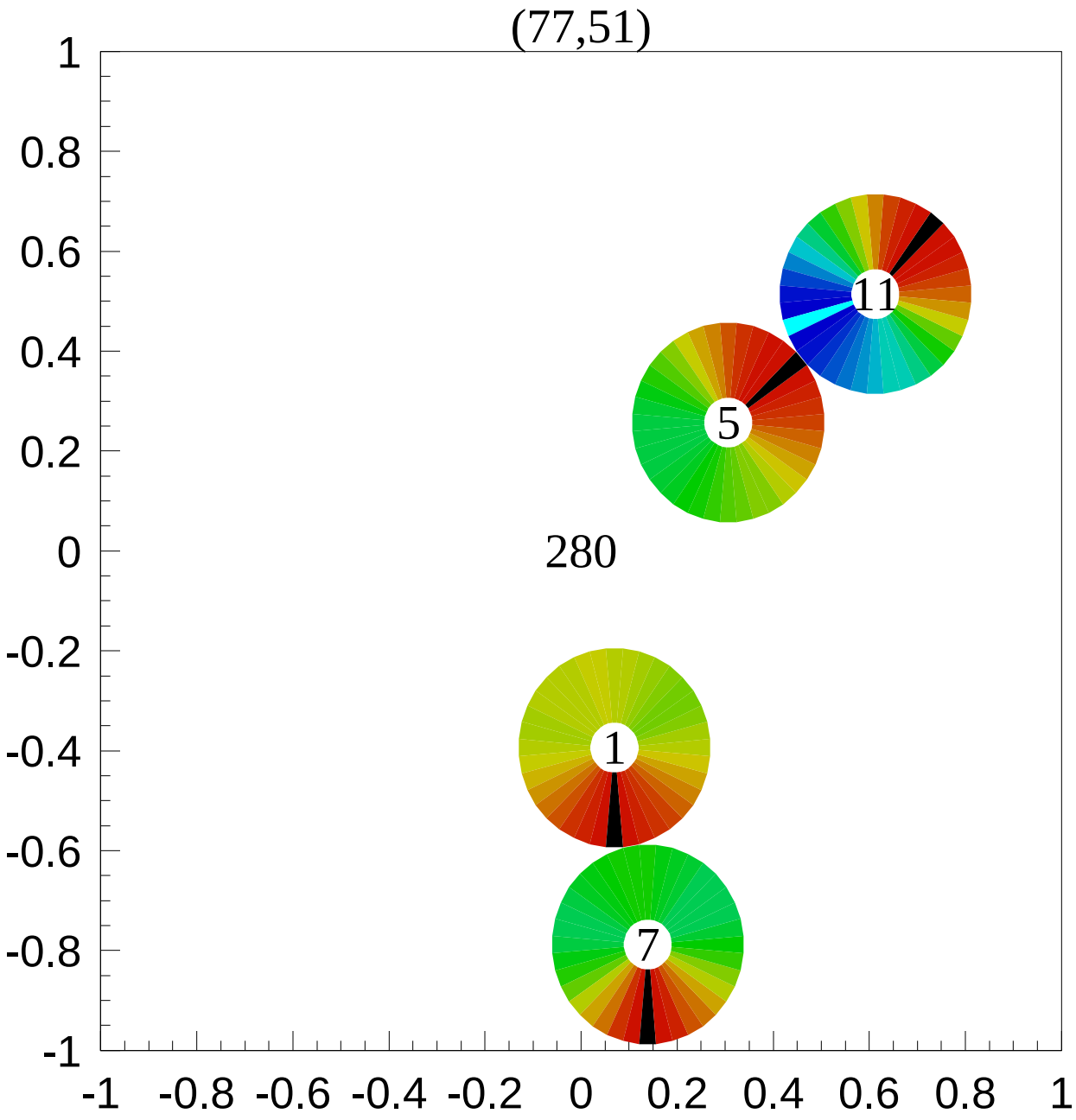

(77,22)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

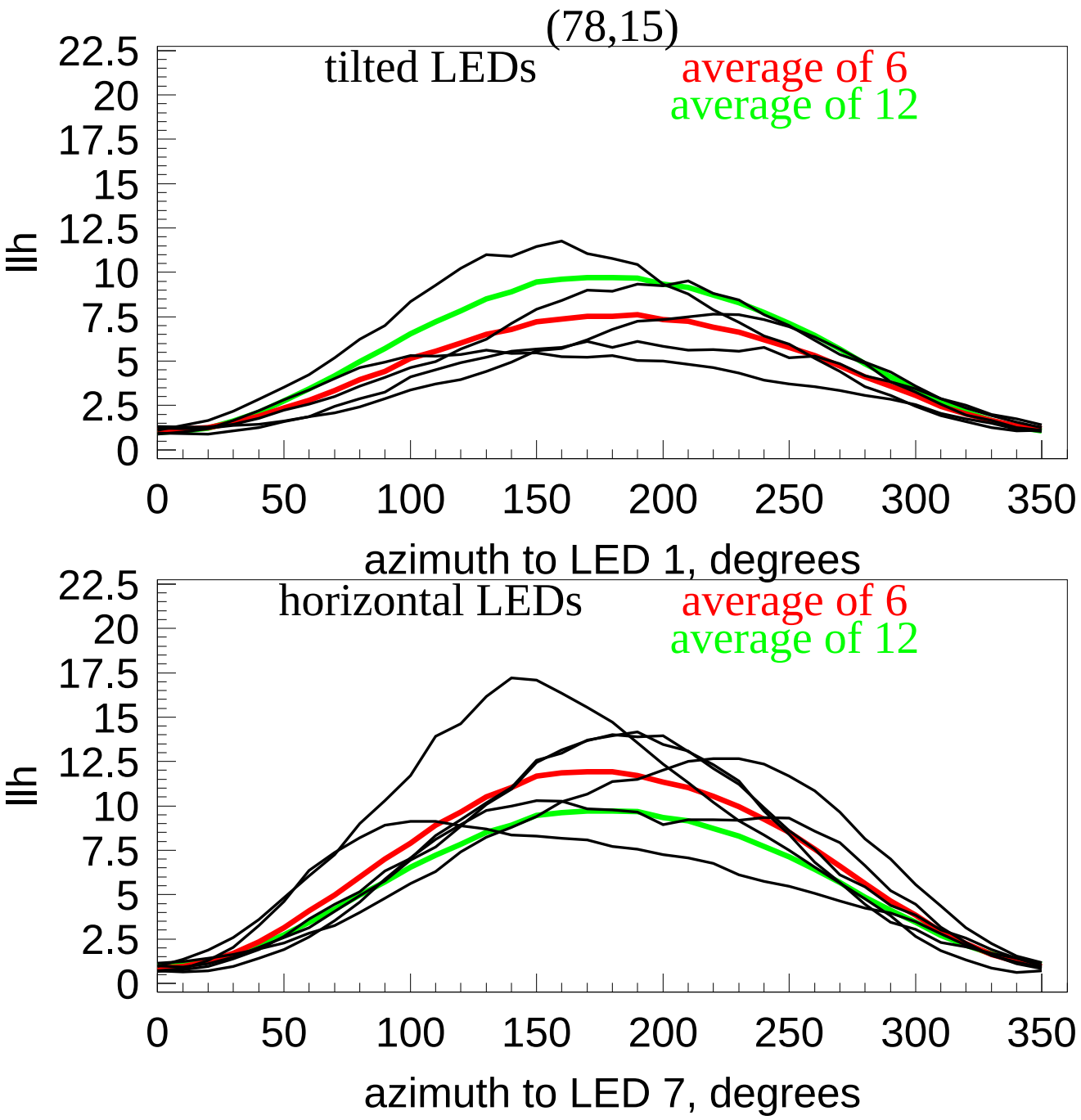

(77,22)
10
9
4
11
3
5
270
2
6
8
12
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

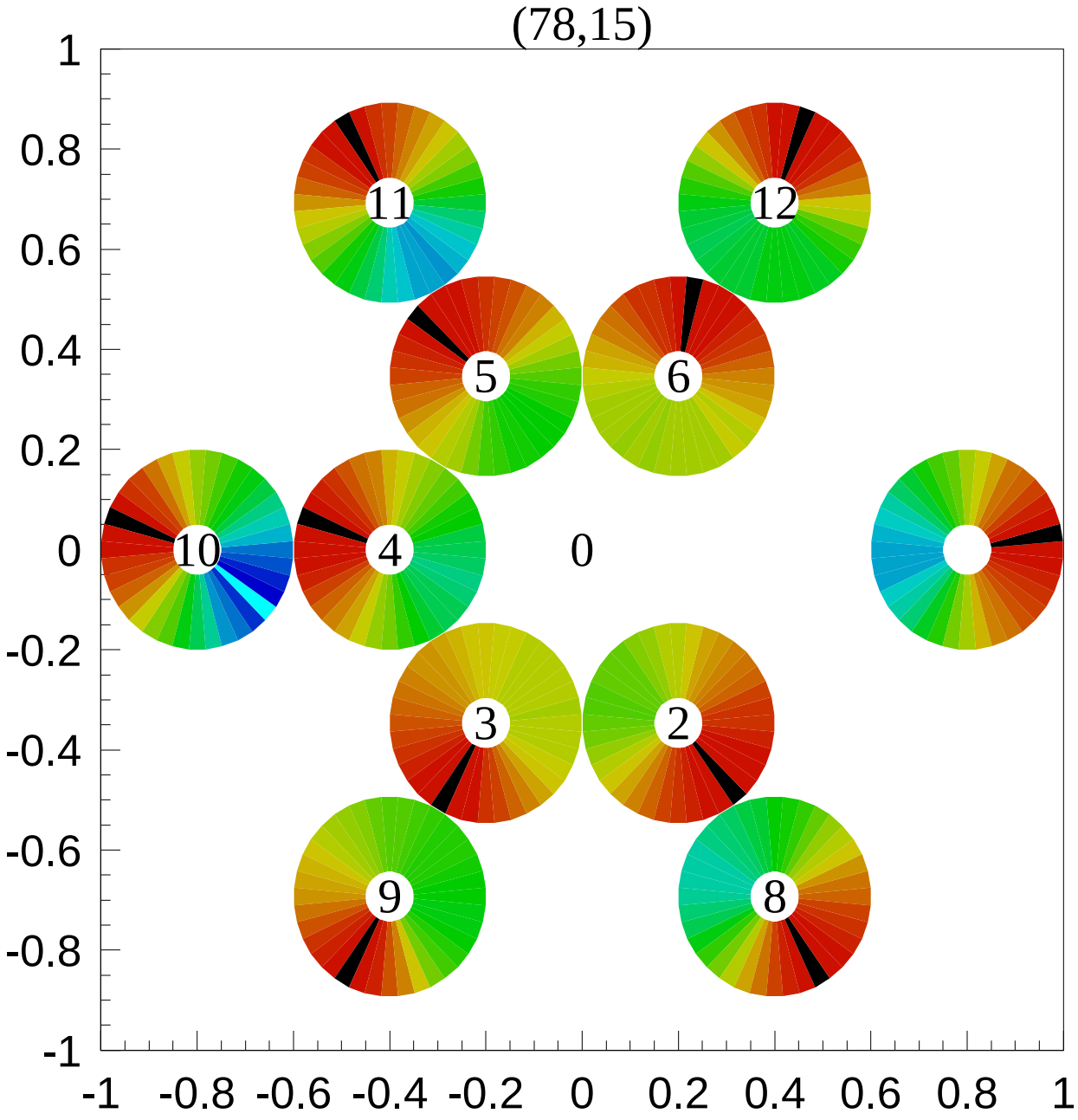

(77,40)
tilted LEDs
average of 6
average of 12
Ilh
20
17.5
15
12.5
10
7.5
5
2.5
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
Ilh
azimuth to LED 7, degrees

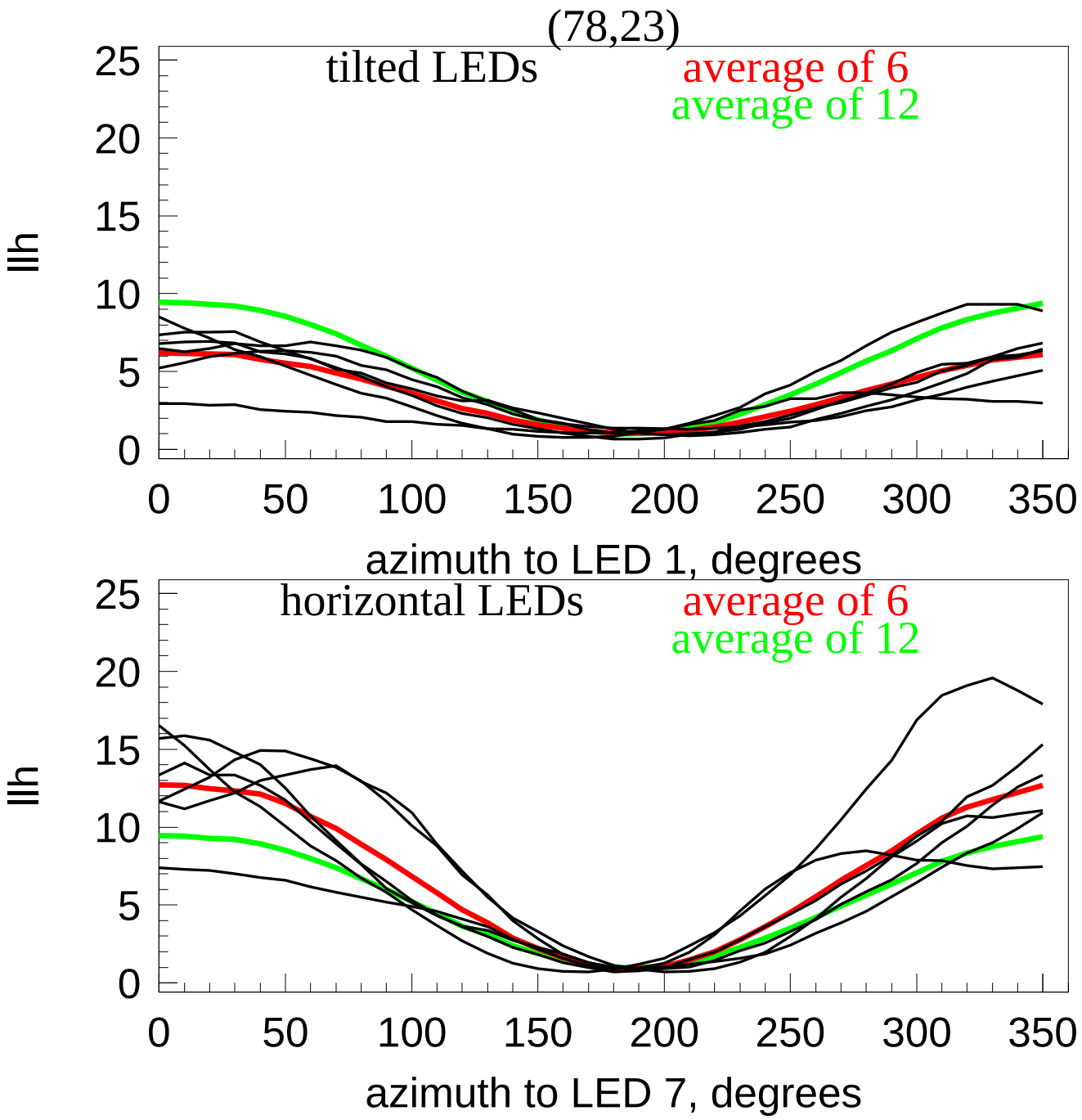

(77,40)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
4
3
260
2
1
12

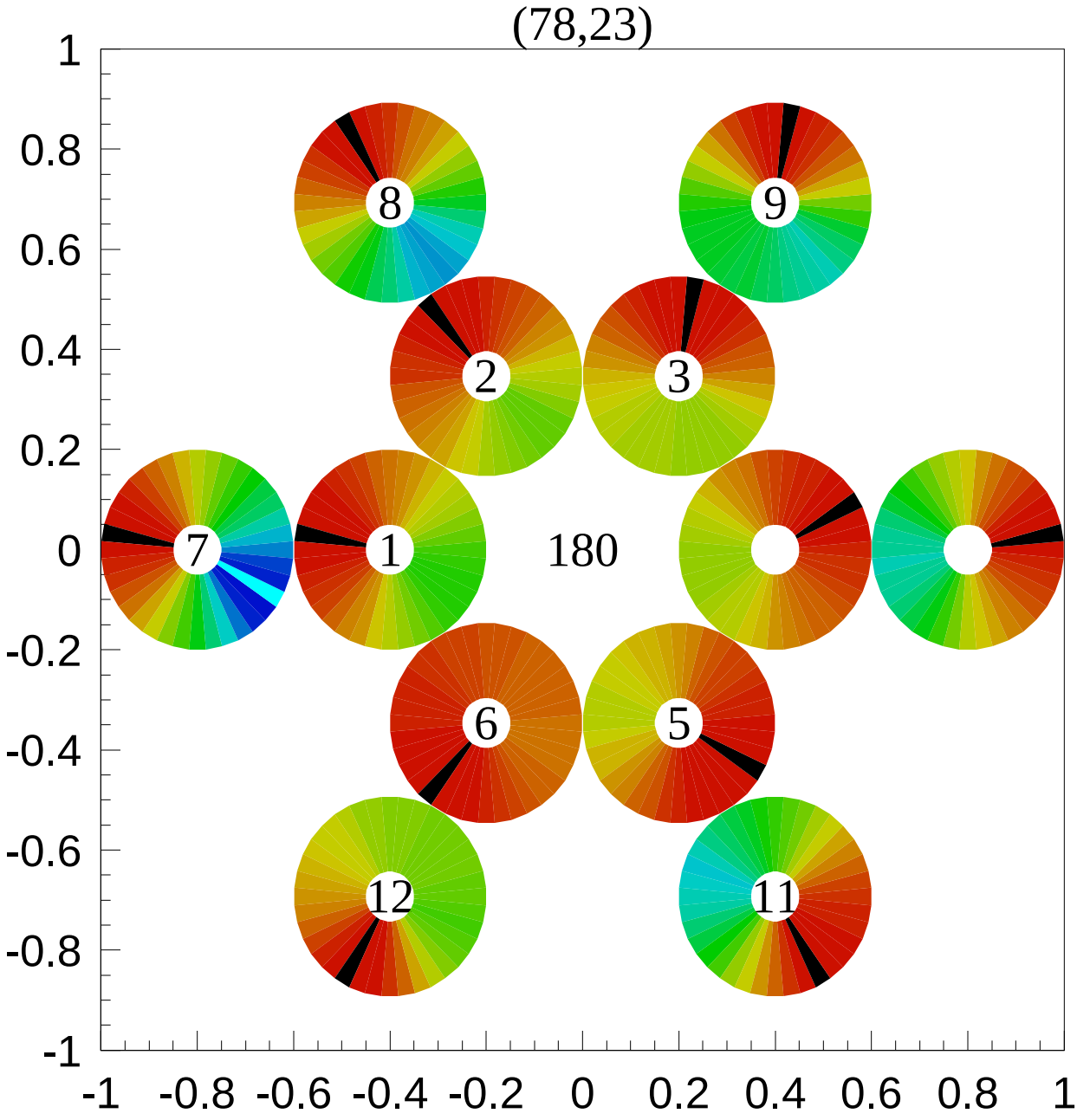

(77,51)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees

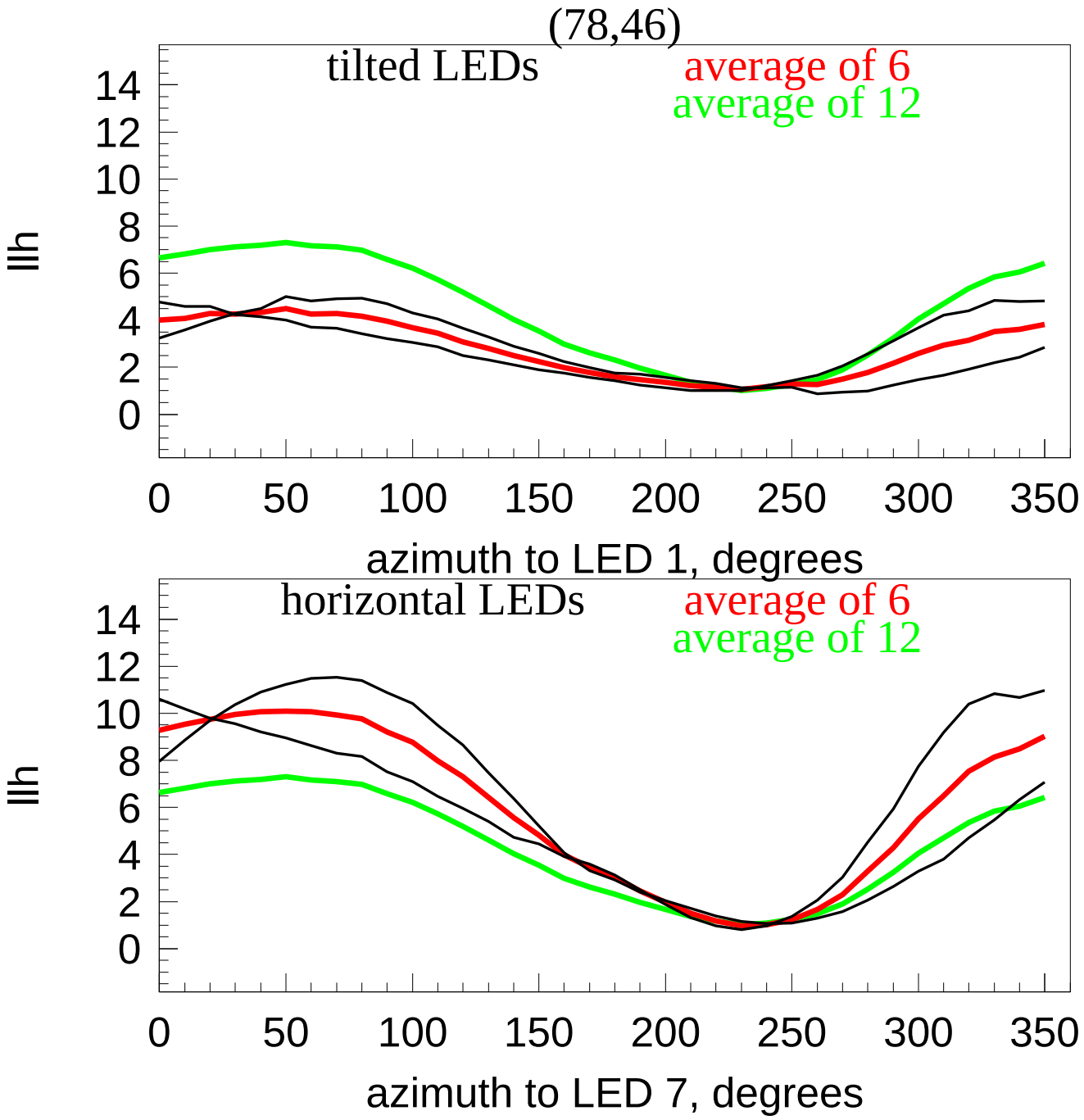

(77,51)
11
5
280
1
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

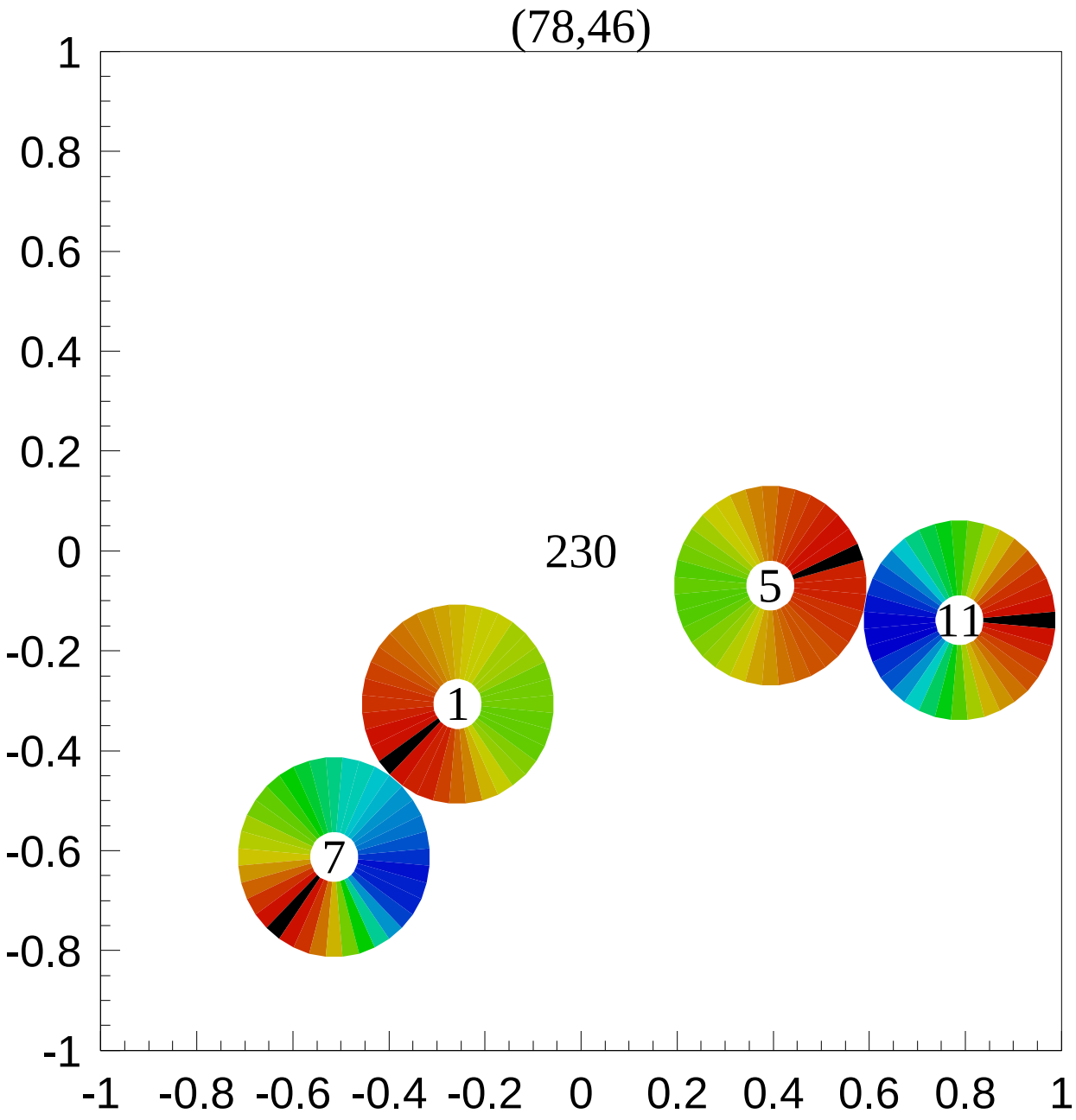

(78,15)
tilted LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
llh
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

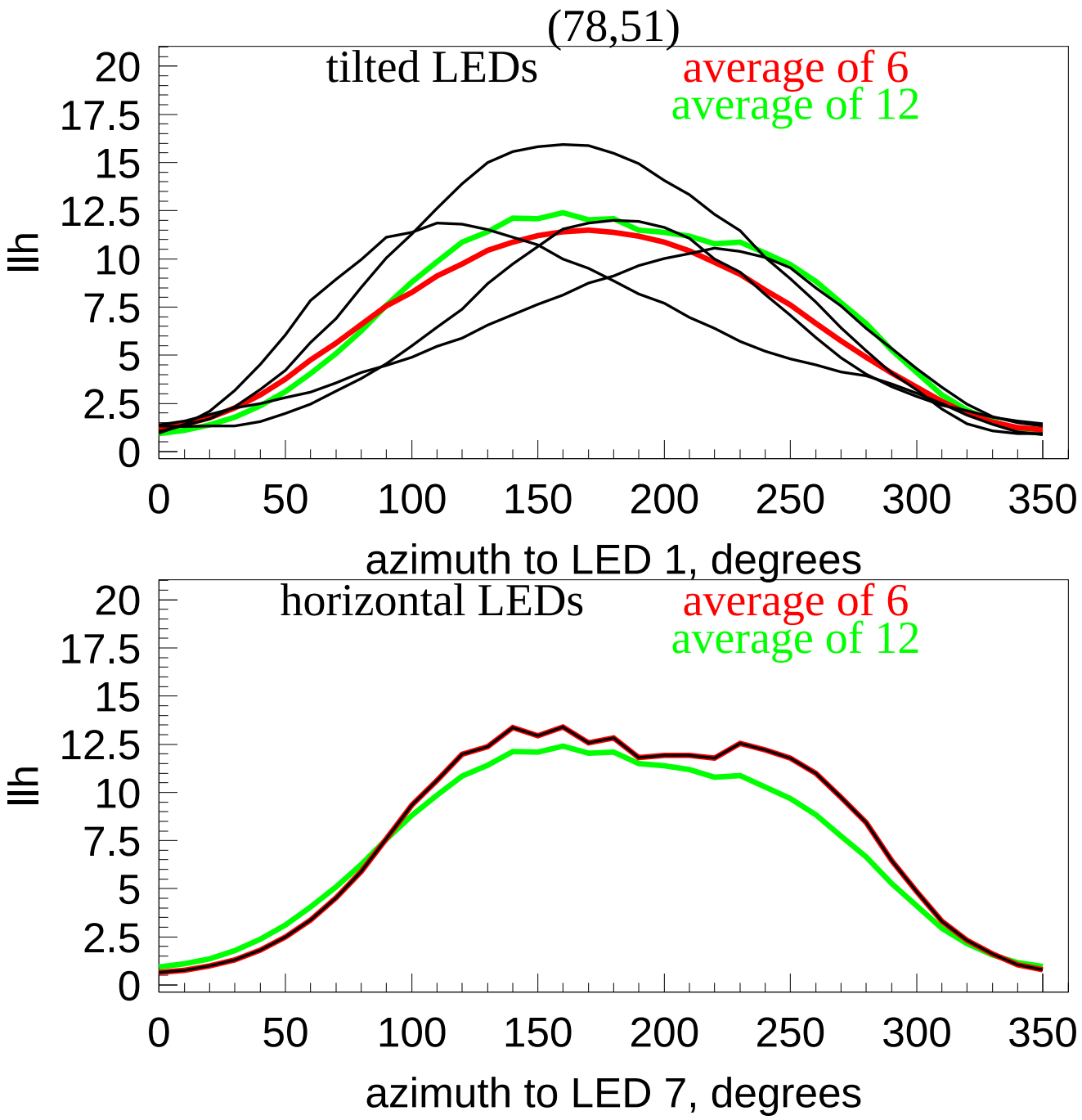

(78,15)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
11
12
5
6
10
4
0
3
2
9
8

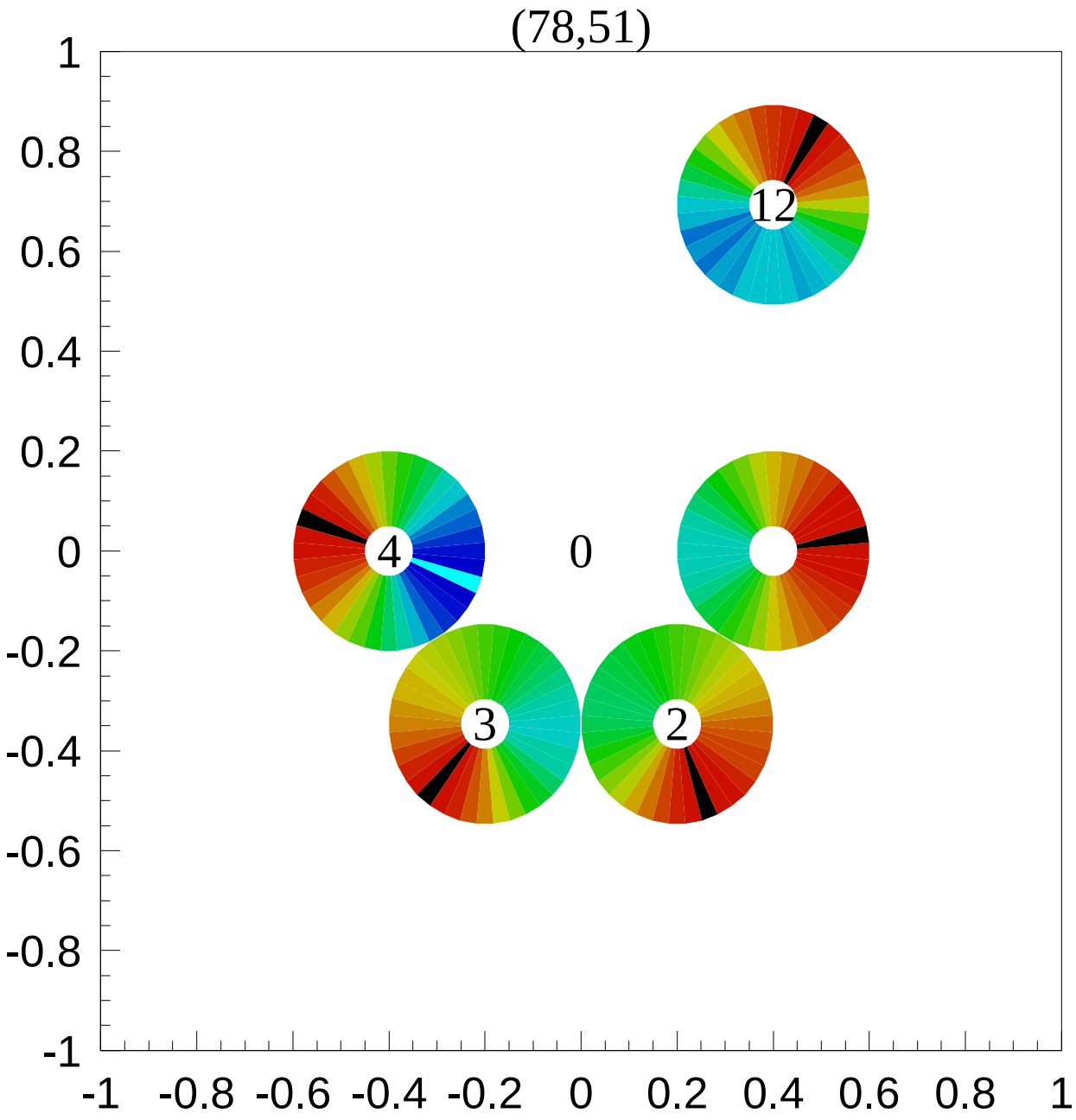

(78,23)
tilted LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
25
20
15
10
5
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

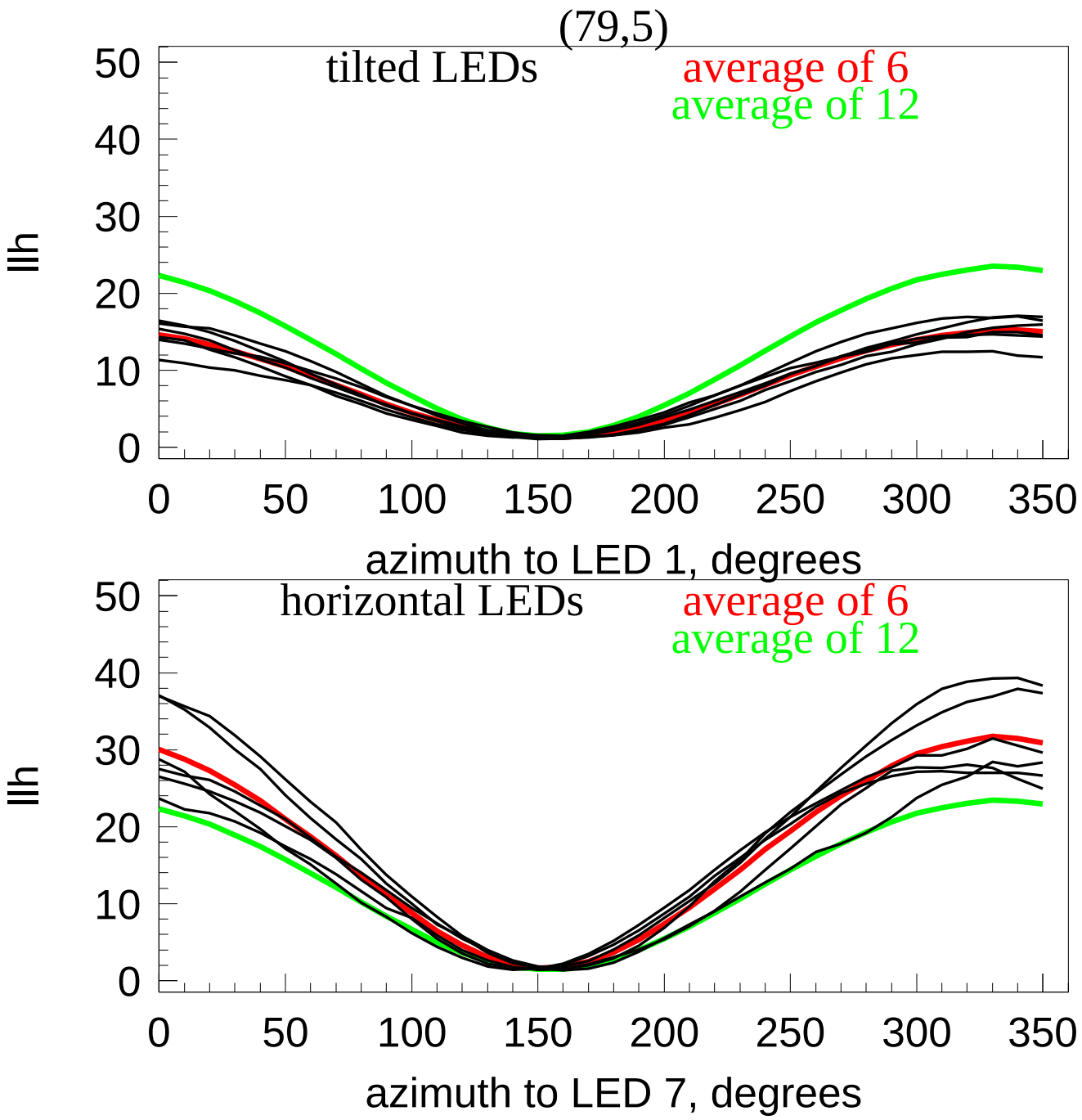

(78,23)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
9
2
3
7
1
180
6
5
12
11

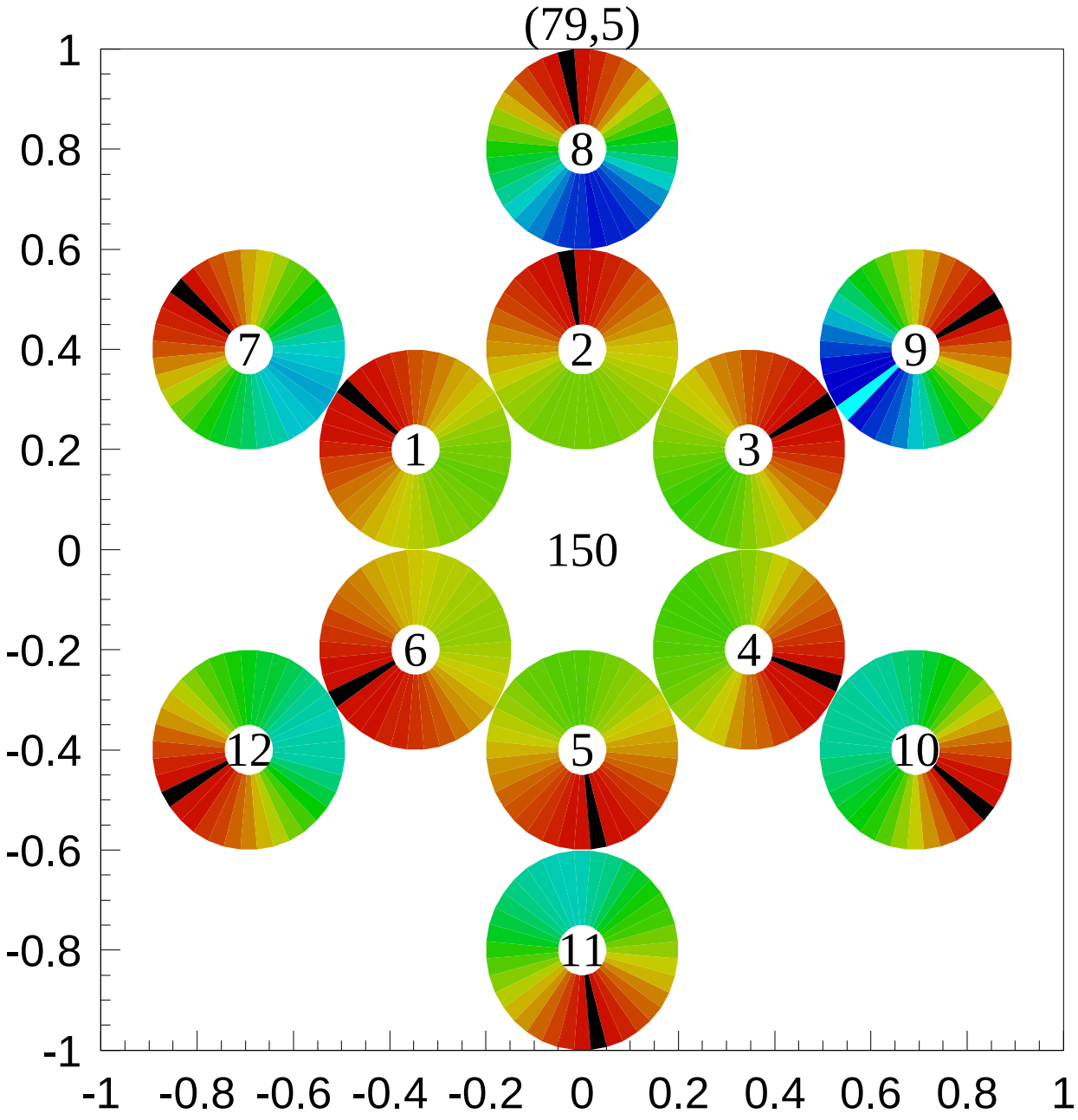

(78,46)
tilted LEDs
average of 6
average of 12
llh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
azimuth to LED 7, degrees

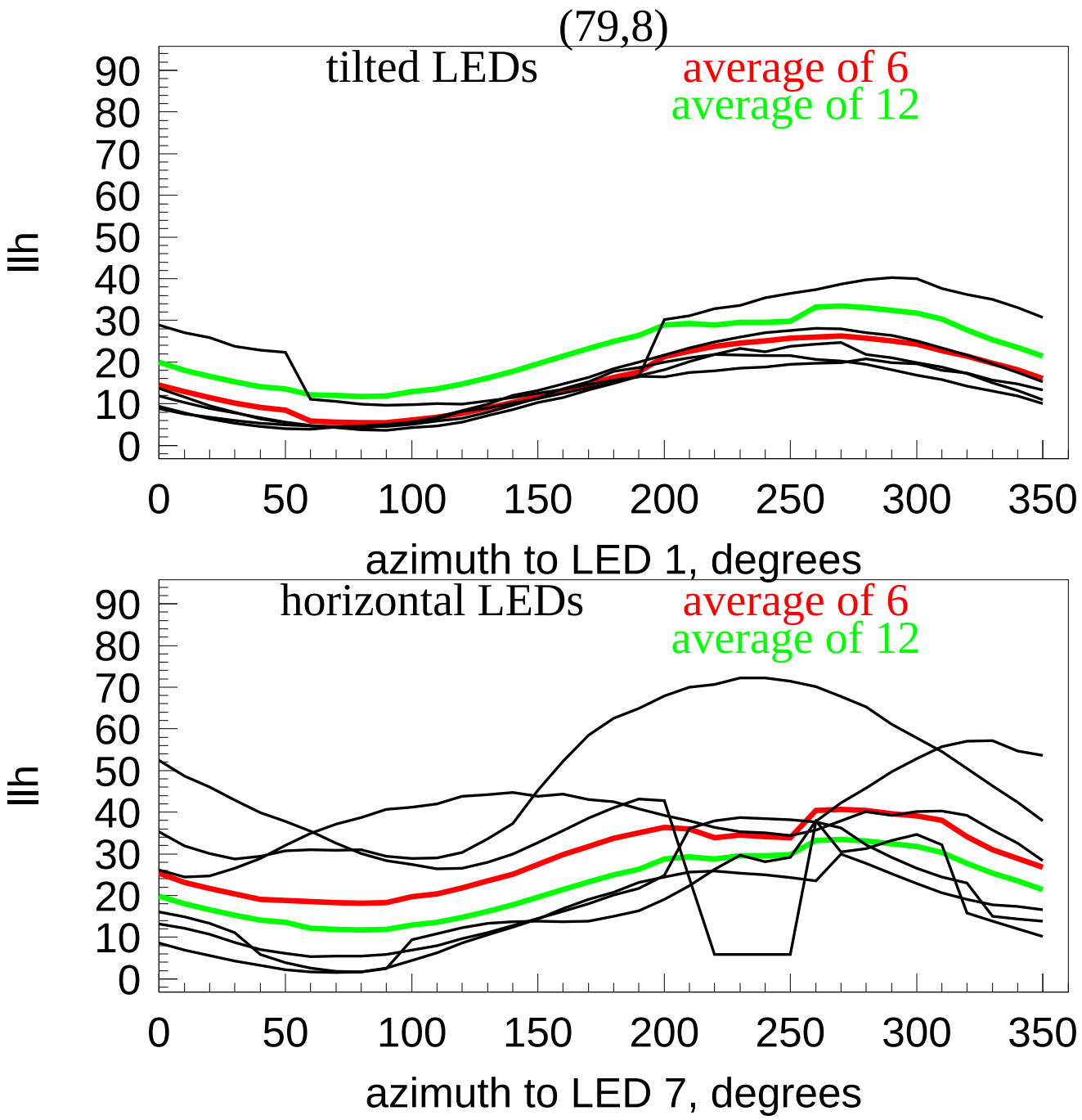

(78,46)
230
1
5
11
7
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

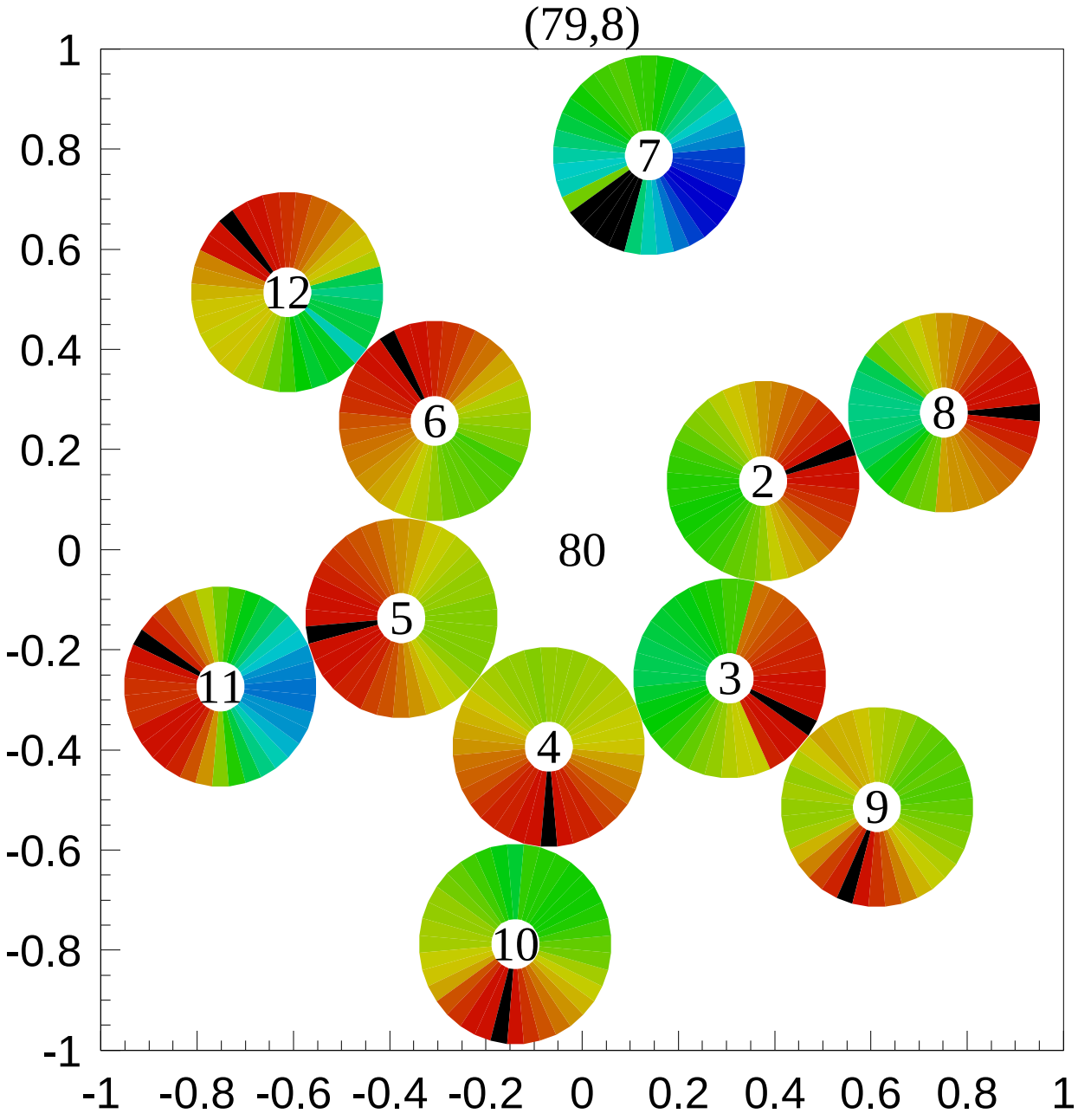

(78,51)
tilted LEDs
average of 6
average of 12
lIh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
lIh
azimuth to LED 7, degrees


(78,51)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
12
4
0
3
2


(79,5)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees


(79,5)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
8
7
2
9
1
3
150
6
4
12
5
10
11


(79,8)
tilted LEDs
average of 6
average of 12
llh
azimuth to LED 1, degrees
horizontal LEDs
average of 6
average of 12
llh
azimuth to LED 7, degrees


(79,8)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
7
12
6
8
2
80
5
11
3
4
9
10