

Aug. 2010

## CURRICULUM VITAE of TERESA MONTARULI

### Personal Data

Place and Date of Birth: Livorno, Oct. 4, 1968

Citizenship: Italian

Foreign Languages: fluent English. French and Spanish at basic level.

Work Address: University of Wisconsin, Department of Physics

1150 University Ave, 53706 Madison WI

Tel: +1-608-890-0901

E-mail: tmontaruli@icecube.wisc.edu

### Appointments

**Since 2010** 0% Appointment Professor in the Department of Astronomy (University of Wisconsin - Madison).

**Since Sep. 2007** Tenured, Associate Professor (University of Wisconsin - Madison).

**Jan. 2006-7** Assistant Professor (University of Wisconsin - Madison and on leave of absence from University of Bari).

**Jan. 2005-6** Visiting Scientist (University of Wisconsin - Madison and on leave of absence from University of Bari).

**Oct. 2004-9** Tenured, Assistant Professor (University of Bari).

**Oct. 2001-4** Assistant Professor (University of Bari).

**2000-1** Research Associate on Neutrino Physics (University of Bari).

**1999-2000** INFN PostDoc fellowship for experimental physicists (6<sup>th</sup> position in Italy).

**1994** INFN fellowship in Particle Physics and Fundamental Phenomena (1<sup>st</sup> position in Italy).

### Education

**Oct. 1998 Ph.D. in Physics** (University of Bari), Thesis on “*Atmospheric neutrino flux and search for astrophysical neutrinos. Measurement with MACRO at Gran Sasso*”, Advisors: Prof. C. De Marzo (U. of Bari), Dr. F. Ronga (INFN, Laboratori Nazionali di Frascati), G. Battistoni (INFN, Milano); thesis evaluators: by Prof. G.L. Fogli (U. of Bari), Prof. T.K. Gaisser (Bartol Institute, Delaware).

**Dec. 1994** Specialization Diploma in Physics (U. of Bologna), Thesis on “*Upper limits on neutrino fluxes induced by WIMPs in the Sun and the Earth with MACRO*”.

**Dec. 1993** Physics Laurea Degree (U. of Bari), *summa cum laude*, Thesis on “*Upward-going muon flux measurement with the MACRO detector*”.

## Awards, Honors and Scientific Charges

**2010** Fellow of the American Physics Society “for fundamental contributions, both experimental and theoretical, to the understanding of cosmic and atmospheric neutrino fluxes, neutrino mass, and the spectra of dark matter annihilations”;

Member of the Particle Astrophysics and Gravitation Prioritization Panel of the Astro Survey 2010 of the National Academy: [http://sites.nationalacademies.org/bpa/BPA\\_049810](http://sites.nationalacademies.org/bpa/BPA_049810)

**2001** Shakti P. Duggal Award “Introduced in 1983 in recognition of significant contributions to cosmic ray physics by a young scientist of outstanding ability”, ceremony at the 27<sup>th</sup> International Cosmic Ray Conference, Hamburg. Published in Physics Today and available in <http://www.physicstoday.org/pt/vol-54/iss-10/p86a.html>.

**1998** Bruno Rossi Award at Int. School of Sub-nuclear Physics “36<sup>th</sup> Course: from the Planck Length to the Hubble Radius” (Erice).

**1996** Euro-conference Grant to attend VIIIth Rencontres de Blois, “Neutrinos, Dark Matter and the Universe” (France)

Representative of young INFN researchers at the meeting with INFN international referees (President: Prof. B. Richter).

Referee of various journals, between which Astronomical Journal, Astroparticle Physics, JCAP, New J. Physics.

## Grants and Proposals

**2010** PI of HAWC NSF People Proposal for UW-Madison and co-PI for the construction proposal, in charge of trigger electronics, software development, reconstruction and data analysis;

co-PI of IceCube NSF Data Analysis Proposal;

PI of Grad School Proposal: “Exploring the Galactic Neighborhood and the Extragalactic sources of Cosmic Rays” (pending).

**2009-10** PI of NASA GLAST Investigator (Cycle 2) Proposal “Selection of flares of interest for neutrino emission through the study of X-ray and TeV light curves”;

**Since 2006** PI of Blazar monitoring with WIYN 0.9 m telescope (granted observation time each semester)

**2008** PI of Proposal to Graduate School University of Wisconsin, *Optical Monitoring with WIYN and multi-messenger/multi-wavelength study of AGNs* (approved, grant for 6 months of a graduate student).

**2007-2010** co-PI of IceCube Analysis Proposal.

**2003-4** PI of exchange program of scientists between the CiCYT (Spain) and INFN (Italy).

**2001-2** Grants for the development of an e-learning program for Laboratory of Linear Circuits and Optics, Department of Physics, University of Bari.

**Occasionally** Reviewer of NSF proposals, of the Swiss National Science Foundation and of the Netherlands Foundation for Fundamental Research on Matter.

## Experiments and Projects and responsibilities

**Since 2009 HAWC** gamma-astronomy extensive air-shower (Institution Board member, Level 3 responsibility on Trigger).

**Since 2007** Associate member of the **VERITAS** collaboration.

**Since 2005 IceCube** neutrino telescope (since 2006 Trigger Filter and Transmission Board, 2005-7 Publication committee member).

**Since 2000 ANTARES** neutrino telescope (since 2008 coordinator of Multi-messenger working group, since 2000 responsible for the neutrino Monte Carlo generator, 2000-8 coordinator of Astrophysics working group, 2001-8 Publication committee member).

**1999-2007 NEMO R&D** for a km<sup>3</sup> neutrino telescope in the Mediterranean sea.

**2005-2007 KM3NeT R&D** for a km<sup>3</sup> neutrino telescope in the Mediterranean sea.

**1993-2000 MACRO** at the Gran Sasso National Laboratories of the INFN.

## Committees and Service Work at UW

**Since 2010:** Physics Council; Physics Library Facility Committee.

**2007-2010** Prelim Exam Committee.

**Since 2009** Colloquium Committee.

**Since 2008** Letter & Science Faculty Appeals Committee.

**2006-8** Qualifier Exam Committee.

**2006-7** Alumni Relation at the University of Wisconsin.

**Since 2005** Member of various commissions for PhD defenses and prelims.

**Since 2006** 3.5m WIYN Optical Telescope Allocation Committee.

## Organizer of Conferences and Sessions of Conferences

**2010** Organizer of the Mediterranean and Antarctica Neutrino Telescope Symposium (MANTS 2010), Sep. 2010, Paris.

Organizer of Astroparticle 2011, Meeting for the Inauguration of IceCube, Apr. 2011, Madison.

**2009** Creator and Organizer of the Mediterranean and Antarctica Neutrino Telescope Symposium (MANTS 2009), Sep. 2009, Berlin.

Local organizer of NDM09, Madison, Sep. 2009;

High Energy Astrophysics Session at TAUP2009, July 2009, Rome.

**2006** Organizer of the TeV Particle Astrophysics II Workshop in Madison, Aug. 2006

<http://www.icecube.wisc.edu/tev>.

**2005** “High Energy Particles” Session of New Views of the Universe, Kavli Institute Inaugural Symposium in honor of David Shramm, Chicago, Dec. 2005.

“Software simulation and data analysis tools” Session and summary report, II Workshop on Very Large Volume neutrino Telescopes, VLVnT2 (Catania, Italy, Nov. 2005).

**2004** “Atlas Coelestis” Session and summary report, Neutrino Oscillation Workshop, NOW2004 (Otranto,

Italy, Sep. 2004).

## Invited Talks at Conferences

- *Neutrino Astronomy and IceCube*, 6<sup>th</sup> Patras Workshop on Axions, WIMPs and WISPs, Zurich, July 2010.
- *IceCube and Searches for Astrophysical Sources*, Cosmic Ray Int. Seminar on “100 years of Cosmic Ray Physics: from Pioneering Experiments to Physics in Space (CRIS 2010)”, Catania, Sep. 2010.
- *The Gamma-Neutrino-Cosmic Ray Astronomy Connection*, Vulcano Workshop 2010, Vulcano, Sicily, May 2010;
- **Rapporteur Talk** on High Energy Phenomena and X-ray, Gamma-Ray and Neutrino Astronomy and Astrophysics Sessions, 31<sup>th</sup> Int. Cosmic Ray Conference (ICRC2009), Lodz, Poland;
- *Recent Results from IceCube*, American Physical Society Meeting, Denver, May 2009.
- *Searching for Astrophysical Neutrinos in Neutrino Telescopes*, The 2009 Snowbird Workshop on Particle Astrophysics, Astronomy and Cosmology, SNOWPAC2009, Utah, Feb. 2009.
- *The ANTARES underwater neutrino telescope*, Seventh Alexander Friedmann International Seminar on Gravitation and Cosmology, July 2008, Joao Pessoa, Brazil.
- *Neutrino Astronomy in Ice*, Neutrino Oscillation Workshop 2008 (NOW 2008), Conca Specchiulla, Italy, Sep. 6-12, 2008.
- *Neutrino Astronomy*, Cosmic Ray International Seminar “Ultra-High Energy Cosmic Ray Status and Perspectives (CRIS 2008)”, Salina, Italy, Sep. 15-19., 2008.
- *Recent Developments in High Energy Neutrino Astronomy*, International Astroparticle Physics Symposium, IAPS2008, May 6-9, 2008, Colorado, U.S.A.
- *IceCube and Multi-Messengers*, 2<sup>nd</sup> Multi-Wavelength Workshop for Next-Generation Gamma-Ray Experiments, Aug. 2007, Adler Planetarium, Chicago.
- *Status of IceCube*, Frontier Objects in Astrophysics and Particle Physics, Vulcano 2006, (Vulcano Island, Sicily, Italy, May 2006);
- *Neutrino Astronomy and Telescopes*, CRIS 2006, Cosmic ray International Seminar, Ultra-High Energy Cosmic Rays: Status and Perspectives (Catania, Italy, Jun 2006);
- *The ANTARES Neutrino telescope*, TeV Particle Physics I (Fermilab, IL, USA, July 2005);
- *Neutrino Astrophysics*, Electron-Nucleus Scattering –VIII Conference (Jun. 2004, Isola d’Elba, Italy);

- **Rapporteur Talk** on High Energy Phenomena Sessions at 28<sup>th</sup> Int. Cosmic Ray Conference (ICRC2003) (Tsukuba, Japan);
- *High energy Neutrino Astrophysics*, 8<sup>th</sup> Int. Workshop on Topics in Astroparticle and Underground Physics (TAUP 2003) (Sep. 2003, Seattle, USA);
- *Astrophysics Neutrino Detection*, XV IFAE Workshop on High Energy Physics, (Apr. 2003, Lecce, Italy).
- *Neutrino measurement with MACRO: neutrino oscillation, dark matter and astronomy studies*, School and Workshop on Neutrino Particle Astrophysics (Feb. 2002, Les Houches, France);
- *High energy neutrino astronomy and WIMP search results*, NATO Advanced Research Workshop, Cosmic Radiation from Astronomy to particle physics (Mar. 2000, Oujda, Marocco);
- *Atmospheric Neutrino Production*, Les Houches Euro-conference on Neutrino Masses and Mixings (Feb. 2001, France);
- *Neutrino Astronomy and Indirect Search for WIMPs*, Int. Workshop on Aspects of Dark Matter in Astro- and Particle Physics (DARK2000), (Jul 2000, Heidelberg, Germany);
- *High Energy Neutrino Astrophysics*, LXXXVI National Congress of Scuola di Fisica Italiana (Sep. 2000, Palermo, Italy).
- *The detection of Neutrinos, Monopoles and Indirect Search for WIMPs in the MACRO detector*, Conference on Beyond Standard Model Physics (BEYOND99) (Jun 1999, Castle Ringberg, Germany);
- *Atmospheric and Astrophysics Neutrinos with MACRO*, Int. Workshop on Aspects of Dark Matter in Astro- and Particle Physics (DARK 98) (Jul 1998, Heidelberg, Germany);
- *Upward-going muons and WIMPs in the MACRO detector*, DM-Italia-97, Workshop on Dark Matter (Dec. 1997, Trieste, Italy).
- *Neutrino induced upward-going muons and WIMP search in the MACRO experiment*, Int. Workshop on Aspects of Dark Matter in Astro- and Particle Physics (DARK96) (Sep. 1996, Heidelberg, Germany).

## Talks at International Conferences

- *First Results of the IceCube Observatory on High Energy Neutrino Astronomy*, talk at TAUP2007, Topics in Astroparticle and Underground Physics, Sep. 2007, Sendai, Japan.
- *The ANTARES Neutrino telescope*, talk at PANIC 2005, Particles and Nuclei International Conference (Santa Fe, NM, Oct 2005)
- *Neutrino Astronomy with ANTARES*, XXXIV Int. Symposium on Multiparticle Dynamics (ISMD2004) (Sonoma County, CA, USA, Jul 2004)

- *Status Report of the ANTARES Project*, 7<sup>th</sup> Int. Workshop on Topics in Astroparticle and Underground Physics (TAUP 2001) (Sep. 2001, Gran Sasso National Laboratories, Italy);
- *Results on high-energy atmospheric neutrino oscillations with MACRO*, 27<sup>th</sup> International Cosmic Ray Conference (ICRC2001) (Aug. 2001, Hamburg, Germany)
- *The measurement of upward going muons using the MACRO detector*, 6<sup>th</sup> Int. Workshop on Topics in Astroparticle and Underground Physics (TAUP97) (Sep. 1997, Gran Sasso National Laboratories).
- *Neutrino induced upgoing muons in MACRO*, VIIIth Rencontres de Blois, Talk with Special Grant (Jun 1996, France);
- *Search for neutrinos from the Sun and the Earth with the MACRO detector*, 5<sup>th</sup> Int. Workshop on Topics in Astroparticle and Underground Physics (TAUP95) (Sep. 1995, Toledo, Spain)

## Invited Lectures, Seminars and Colloquia

- *In search for extra-terrestrial high-energy neutrinos*, seminar at Rochester University, Dec. 1, 2009.
- *In search for extra-terrestrial high-energy neutrinos*, colloquium at Vanderbilt University, Nov. 12, 2009.
- *Searching for extra-terrestrial high-energy neutrinos*, seminar at Laboratori Nazionali del Gran Sasso, Oct. 1 and at Laboratori Nazionali di Frascati, Oct 16, 2009.
- *Recent IceCube Results*, Kavli Institute for Cosmological Physics (KICP), Chicago, Mar. 11, 2009.
- *Neutrino Telescopes Results*, University of Zürich, Dec. 17, 2008.
- *Neutrino Telescope Results*, CPPM, Marseille, Dec. 15, 2008.
- *Results from the Neutrino Telescopes IceCube and ANTARES*, University of Wisconsin-Milwaukee, Nov. 17, 2008.
- *Astronomy with Neutrinos and IceCube*, Physics Colloquium, University of Arizona, Tucson, Feb 15, 2008.
- *IceCube*, Argonne National Laboratory, IL, USA, Nov. 2007.
- *Astronomy with Neutrinos*, University of Arizona, Tucson, Feb. 2007.
- *Exploring the High Energy Universe with Neutrinos*, European Gravitational Observatory Seminar, Pisa, Italy, Mar. 2007.
- *Exploring the High Energy Universe with Neutrinos and Unusual Telescopes*, The Aachen University of Technology RWTH, Germany, Feb. 2007.

- *The progress in neutrino astronomy and news from IceCube*, Max Planck Institute for Astronomy, Heidelberg, Germany, Feb. 2007.
- *IceCube Status*, INFN, Commission for Astroparticle Physics Experiments (Commissione 2), Italy, Jan. 2007.
- *The Exploration of the High Energy Frontier with Neutrino Telescopes*, Colloquium at the University of Wisconsin, Department of Physics, Dec. 2006.
- *Neutrino Telescopes and their Mission*, Kavli Institute for Cosmological Physics (KICP) at The University of Chicago, Nov. 2006.
- *Starting Multi-wavelengths Campaigns*, Seminar at the University of Wisconsin, Department of Astronomy, Nov. 2006.
- *Neutrino Astronomy and Telescopes. The case of AMANDA and IceCube*, Physics colloquium at the University of Florida, Gainesville, Feb. 2006.
- *Neutrino Astronomy and Telescopes*, Milwaukee University, Nov. 2005.
- *Neutrino Astronomy and Telescopes. The case of AMANDA and IceCube*, University of Wisconsin, Department of Astronomy, Apr. 2005.
- *Neutrino Telescopes*, Spanish School of High Energy Physics (Alicante, Spain, Mar. 2004);
- *Neutrino Telescopes and the ANTARES Experiment*, Scuola Superiore Normale di Pisa (Pisa, Italy, 2004);
- *The MACRO experiment at Gran Sasso: neutrino measurement and other major results and Neutrino Astrophysics and Telescopes*, Colloquia at Wisconsin University (Mar. 2004, Madison, USA).
- *High energy neutrino telescopes*, Int. School on Astroparticle Physics (Jun. 2003, Conca Specchiulla, Italia);
- *Scientific Objectives of Neutrino Astronomy*, Inauguration of ANTARES Station (La Seyne sur Mer, France), attended by the Ministers of University and Research of France and Italy;
- *Current status of neutrino astrophysics experiments*, Padova University (2003)
- *The MACRO experiment at Gran Sasso: neutrino measurement and other major results and A status report on ANTARES*, Colloquia at Bartol Research Institute (Sep. 2002, Delaware, USA)
- *The ANTARES project: a neutrino telescope in the Mediterranean*, Pisa University (Pisa, Italy, 2002)
- *Neutrino Astronomy at Neutrino Telescopes*, INFN Gran Sasso National Laboratories (2001).

- *Atmospheric neutrinos: present experimental results and future prospects*, INFN Gran Sasso National Laboratories (1999);
- *Atmospheric neutrinos: experimental results and future perspectives*, Bari University (1999);
- *Search for neutrinos of astrophysical origin with MACRO and future perspectives*, Bologna University (1999);
- *Search for sources of neutrinos of astrophysical origin with MACRO and future perspectives*, INFN Frascati National Laboratories (1999)
- *MACRO results on neutrino oscillations*, INFN Frascati National Laboratories (1998).

## Lectures at International PhD Schools

- *Lectures on Neutrino Telescopes*, SLAC Summer School, Aug. 2010.
- *Lectures of Neutrino Astronomy*, XX Seminario Nazionale di Fisica Nucleare e Subnucleare, Otranto, Sep. 2008.
- *Lectures on Neutrino Astrophysics*, Neutrino Factory School, Benasque, Spain, Jun. 2008.
- *Lectures of Cosmic Ray Physics*, XIX Seminario Nazionale di Fisica Nucleare e Subnucleare, Otranto, Sep. 2006.
- *Neutrino Astronomy and Telescopes*, Spanish School of High Energy Physics, Alicante, Spain, 2004.
- *High energy neutrino telescopes*, Int. School on Astroparticle Physics, July 2004, Conca Specchiulla, Italy;
- *Neutrino measurement with MACRO: neutrino oscillation, dark matter and astronomy studies*, School and Workshop on Neutrino Particle Astrophysics, Les Houches, France, 2002.

## Teaching activity at the University of Wisconsin - Madison

### Phys 801: Instrumentation and Methods in Astroparticle Physics

<http://www.icecube.wisc.edu/%7etmontaruli/801.html> (Spring 2006);

<http://www.physics.wisc.edu/grads/courses/spring10/801/> (Spring 2010).

### Phys 208: General Physics

<http://uw.physics.wisc.edu/%7erzchowski/phy208/> (Fall 2006);

<http://www.physics.wisc.edu/undergrads/courses/208-f07/index.html> (Fall 2007);

<http://www.physics.wisc.edu/undergrads/courses/spring08/208/index.html> (Spring 2008).

### Phys 248: A Modern Introduction to Physics,

[http://www.icecube.wisc.edu/%7eshiu/PHY248\\_S07/Physics248.html](http://www.icecube.wisc.edu/%7eshiu/PHY248_S07/Physics248.html) (Spring 2007)

and <http://www.physics.wisc.edu/undergrads/courses/spring09/248/index.html> (Spring 2009).



I designed the course **Phys 801: Instrumentation and Methods in Astroparticle Physics** for graduate and senior undergraduate students with the main aim to train them for research and to increase their ability of evaluation of projects, through the detailed description of selected experiments and future proposals in Particle Astrophysics. The course material covers Introductions on Special Relativity and Particle Physics, General Relativity and Cosmology, Dark Matter, Interaction of Radiation with Matter and Particle Detectors used in Astroparticle Physics, Neutrino, Gamma, Proton and Gravitational Wave Astronomy, Supernova neutrinos, neutrino oscillation experiments. The course includes practical exercises including C++ code development and modern analysis tool handling.

In 2005-8 I have been collaborating in the frame of the **Symbiosis II project: Physics for Biology for Madison** to modify the contents of Phys 208 to better fit the needs and the future outcome of the students attending the course (Bachelors of Science in Biology and other Life Sciences). In order to make Phys 208 a multidisciplinary physics course, lectures, discussion sessions and laboratories include connections between Physics and other Life Sciences, for instance capacitors and RC circuits are explained and applied to cell membranes and ion channels, ion charges and solutions are described as well as conductors and semiconductors, the human vision and the rainbow formation are discussed during optics lectures, quantum mechanics and its applications to molecules, atoms and nuclei are described. Lectures were enriched by practical demos to illustrate in a realistic way physics phenomena. A program for Honor Lectures comprised lectures by Professors in Medical sciences, Biology, Biochemistry and Physics. Laboratories included new modules connected to items presented during lectures, for instance the polarization of sugar, and hand-outs were distributed with questions that helped in the understanding of the experiment. In Fall 2007 the students register for the course where 139 and in Spring 2008 they raised to 250.

In Spring 2006 and 2009, I taught **Phys 248: A Modern Introduction to Physics**. The course comprises about 40 students, mainly physics majors. I taught Modern Physics, including quantum mechanics and general relativity, as well as electromagnetism. In 2009 I rewrote all Labs modules and spreadsheets for students.

## Advising at the University of Wisconsin

### *Post-Docs and Visiting Scientists*

- Naoko Kurahashi (2010-, IceCube - HAWC), graduated at Stanford, work on IceCube Dark Matter analysis, Hardware Trigger of HAWC.
- Juanan Aguilar (2008-, IceCube - HAWC), graduated at Valencia University, work on IceCube muon filtering, point source and GRB analysis and HAWC software studies on the trigger.
- Patrick Berghaus (2007-9, IceCube + start-up budget, visiting scientist), work on charm production in the atmosphere (Ref. A7)[84].
- Chad Finley (2006-2009, IceCube + start-up budget), graduated at Columbia University on HiRes, worked on the point-source analysis for IceCube Ref. A2)[13], A7)[83].
- Juan de Dios Zornoza (2005-2007, Marie Curie Fellowship), graduated at Valencia, work on the analysis of AMANDA-II data from SGR 1806-20 flare (Ref. A2)[25]).

- Alessio Tamburro (summer 2005, start-up), work on a module that calculates any atmospheric or neutrino flux and IceCube and ANTARES coordinate transformations.
- Francesco Depalma (summer 2006, start-up), point source search methods (Ref. A7)[83].
- collaborated with Hagar Landsman (2005, IceCube), work on a model for the emission of high-energy photons and neutrinos from the magnetar flare of SGR 1806-20 (Ref. B2)[97]; Dima Chirkin (2007-, IceCube) atmospheric neutrino analysis in IceCube.

*Graduate students*

- Antonia Hubbard (Summer 2010): data filtering, point source and WIMP analysis in IceCube;
- Ian Wisher (Summer 2010): HAWC trigger and electronics simulation;
- Jon Dumm (Summer 2005 to present): prelim in Dec. 2007, point-source analysis of IceCube data;
- Mike Baker (Summer 2007 to present): prelim in Jan 2008, time dependent point-source analysis and multi-wavelength campaigns; also on Fermi NASA grant and grad school grant.
- Guilhelm Rebeill (Spring 2010) - HAWC trigger and simulation.
- Christine Lewis (Summer 2007-May 2008) - IceCube atmospheric neutrino analysis and on calculations of atmospheric neutrino fluxes;
- Amanda Kruse (Summer 2009) - HAWC simulation.

*Undergraduate students:*

- Kyle Jero (summer 2010);
- David Fierroz (REU student, summer 2010);
- Sam Flynn (summer 2007, since Jan 2010 thesis advisor for Physics Engineering);
- Mary Alice Cusentino (fall 2009);
- Erin Conrad (spring 2009, 2007), Marshall scholarship (University College London) and the Durand Scholarship (UW).
- Angie Parker (summer 2009);
- Joel Bressieux (master thesis co-advisor, Ecole Polytechnique Federale de Lausanne);
- Kristin Rosenau (REU student, summer 2008);
- Robert Joynt (summer 2008);

- Sujeet Sakula (summer 2008);
- Anthony Pavkovich (summer 2007);
- Nicole Fields (REU student, summer 2007);
- Matthew Bayer (2006-7);
- Melissa Jacquart (fall-spring 2006);
- A.J. Heroux (REU student, summer 2005);
- K. Larson (REU student, summer 2006).

All of my REU students were selected to present posters at the American Astronomical Society as a reward for their research program.

### **Teaching activity at the University of Bari, Italy**

Between Oct. 2001-4 I was an Assistant Professor at the University of Bari, where I taught 2 Courses per semester in Fundamental Physics and Experimental Laboratories of Optics and Linear Electronics. I advised 9 students for their Laurea Degree Thesis.

## PUBLICATION LIST of TERESA MONTARULI

### Impact of Publications in the International Scientific Community

From SPIRES database (<http://www.slac.stanford.edu/spires> and a search there <http://www.slac.stanford.edu/spires/find/hep/www?rawcmd=FINN+a+Montaruli&FORMAT=wwwcitesummary&SEQUENCE=>): 185 papers (of which 147 are published or arXiv E-prints), 1 famous papers: 1 (cited 455 times) Ref. A)[71], 8 very well known papers cited between 100-249 times and 10 well known papers cited between 50-99 times.

### Publications in Refereed Journals

#### A1) Review Papers

- [1] L. Anchordoqui and T. Montaruli, *In Search of Extraterrestrial High Energy Neutrinos*, Annual Review of Nuclear and Particle Science, to be published in 2010 [arXiv:0912.1035].
- [2] W. Bednarek, F. Burgio and T. Montaruli, *Galactic discrete sources of high energy neutrinos*, *Astron. Rev.* **49** (2005) 1-21.

#### A2) IceCube Experiment

- [3] R. Abbasi *et al.*, *Search for Dark Matter from the Galactic Halo with IceCube*, *subm. to Phys. Rev. D* (2010)/
- [4] R. Abbasi *et al.*, *The first search for extremely-high energy cosmogenic neutrinos with the IceCube Neutrino Observatory*, *subm. to Phys. Rev. D* (2010).
- [5] R. Abbasi *et al.*, *Search for relativistic magnetic monopoles with the AMANDA-II neutrino telescope*, *subm. to Eur. J. of Phys.* (2010).
- [6] R. Abbasi *et al.*, *The Energy Spectrum of Atmospheric Neutrinos between 2 and 200 TeV with the AMANDA-II Detector*, *Astrop. Phys.* **34** (2010) 48-58.
- [7] R. Abbasi *et al.*, *Measurement of the Anisotropy of Cosmic Ray Arrival Directions with IceCube*, *Astrop. J.* **718** (2010) L194.
- [8] R. Abbasi *et al.*, *Calibration and Characterization of the IceCube Photomultiplier Tube*, *NIM A* **618** 139-152.
- [9] R. Abbasi *et al.*, *Extending the search for neutrino point sources with IceCube above the horizon*, *Phys. Rev. Lett.* **103** (2009) 221102.

- [10] R. Abbasi *et al.*, *Search for muon neutrinos from Gamma-Ray Bursts with the IceCube neutrino telescope*, *Astrop. J.* **710** (2010) 346 [arXiv:0907.2227].
- [11] R. Abbasi *et al.*, *Measurement of sound speed vs. depth in South Pole ice for neutrino astronomy*, *subm. to Astrop. Phys* (2009) [arXiv:0909.2629v1].
- [12] R. Abbasi *et al.*, *Search for High-Energy Muon Neutrinos from the “Naked-Eye” GRB 080319B with the IceCube Neutrino Telescope*, *Astrop. J.* **701** (2009) 1721-1731.
- [13] R. Abbasi *et al.*, *First Neutrino Point-Source Results From the 22-String IceCube Detector*, *Astrop. J. L* **701** (2009) L47-L51.
- [14] R. Abbasi *et al.*, *Search for Point Sources of High Energy Neutrinos with Final Data from AMANDA-II*, *Phys. Rev. D* **79** (2009) 062001.
- [15] R. Abbasi *et al.*, The IceCube Collaboration, *Determination of the Atmospheric Neutrino Flux and Searches for New Physics with AMANDA-II*, *Phys. Rev. D* **79** (2009) 102005.
- [16] R. Abbasi *et al.*, The IceCube Collaboration, *Limits on a muon flux from neutralino annihilations in the Sun with the IceCube 22-string detector*, *Phys. Rev. Lett.* **102** (2009) 201302.
- [17] R. Abbasi *et al.*, The IceCube Collaboration, *The IceCube Data Acquisition System: Signal Capture, Digitization, and Timestamping*, *Nuclear Inst. and Methods in Physics Research, A* **601** (2009), pp. 294-316, and arXiv:0810.4930.
- [18] R. Abbasi *et al.*, The IceCube Collaboration, *Solar Energetic Particle Spectrum on 13 December 2006 Determined by IceTop*, *Astrop. J. Lett.* **689** (2008) L65-L68, and arXiv:0810.2034.
- [19] A. Achterberg *et al.*, The IceCube Collaboration, *The Search for Muon Neutrinos from Northern Hemisphere Gamma-Ray Bursts with AMANDA*, *Astrophys. J.* **674** (2008) 357-370.
- [20] A. Achterberg *et al.*, The IceCube Collaboration, *Search for Ultra High-Energy Neutrinos with AMANDA-II*, *Astrophys. J.* **675** (2008) 1014.
- [21] A. Achterberg *et al.*, The IceCube Collaboration, *Multiyear search for a diffuse flux of muon neutrinos with AMANDA-II*, *Phys. Rev. D* **76** (2007) 042008.
- [22] A. Achterberg *et al.*, The IceCube Collaboration, *Search for neutrino-induced cascades from gamma-ray bursts with AMANDA*, *Astrophys. J.* **664** (2007) 397-410.
- [23] A. Achterberg *et al.*, The IceCube Collaboration, *Limits on the muon flux from neutralino annihilations at the center of the Earth with AMANDA*, *Astropart. Phys.* **26** (2006) 129-139.
- [24] A. Achterberg *et al.*, The IceCube Collaboration, *Five years of searches for point sources of astrophysical neutrinos with the AMANDA-II neutrino telescope*, *Phys. Rev. D* **75** (2007) 102001, eprint: astro-ph/0611063 (2006).

- [25] A. Achterberg *et al.*, The IceCube Collaboration, *Limits on the high-energy gamma and neutrino fluxes from the SGR 1806-20 giant flare of December 27th, 2004 with the AMANDA-II detector*, Phys. Rev. Lett. **97** (2006) 221101, eprint: astro-ph/0607233.
- [26] A. Achterberg *et al.*, The IceCube Collaboration, *First Year Performance of The IceCube Neutrino Telescope*, Astrop. Phys. **26** (2006) 155-173, eprint: astro-ph/0604450 (**TopCite = 50+, cited 52 times**).
- [27] agn2006 A. Achterberg *et al.*, The IceCube Collaboration, *On the selection of AGN neutrino source candidates for a source stacking analysis with neutrino telescopes*, Astrop. Physics **26** (2006) 282-300, (**internal referee in the collaboration**), eprint: astro-ph/0609534.
- [28] A. Achterberg *et al.*, The IceCube Collaboration, *Detection of atmospheric muon neutrinos with the IceCube 9-string detector*, Phys. Rev. D **76** (2007) 027101.

### A3) ANTARES Experiment

- [29] J.A. Aguilar *et al.*, *AMADEUS The Acoustic Neutrino Detection Test System of the ANTARES Deep-Sea Neutrino Telescope*, subm. to NIM A (2010).
- [30] J.A. Aguilar *et al.*, *Zenith distribution and flux of atmospheric muons measured with the 5-line ANTARES detector*, subm. to (2010) [arXiv:1007.1777].
- [31] J.A. Aguilar *et al.*, *Performance of the front-end electronics of the ANTARES Neutrino Telescope*, accept. by NIM A [arXiv:1007.2549].
- [32] J.A. Aguilar *et al.*, *Measurement of the atmospheric muon flux with a 4 GeV threshold in the ANTARES neutrino telescope*, Astrop. Phys. **33** (2010) 86-90.
- [33] J.A. Aguilar *et al.*, *Performance of the first ANTARES detector line*, Astrop. Phys. **31** (2009) 277-283.
- [34] J.A. Aguilar *et al.*, *The ANTARES Optical Beacon system*, Nucl. Instr. & Meth. **A 578/3** (2007) 498-509.
- [35] J.A. Aguilar *et al.*, *Studies of a full scale mechanical prototype line for the ANTARES neutrino telescope and tests of a prototype instrument for deep-sea acoustic measurements*, NIM **A581** (2007) 695-708.
- [36] J.A. Aguilar *et al.*, *The data acquisition system for the ANTARES neutrino telescope*, Nucl. Instr. & Meth. **A570** (2007) 107-116 and eprint: astro-ph/0610029 (2006).
- [37] J.A. Aguilar *et al.*, *First results of the Instrumentation Line for the deep-sea ANTARES neutrino telescope*, Astrop. Phys. **26** (2006) 314-324.

- [38] J.A. Aguilar *et al.*, *Study of large hemispherical photomultiplier tubes for the ANTARES neutrino telescope*, Nucl. Instr. Meth. **A555** (2005) 132-141, eprint: physics/0510031.
- [39] J.A. Aguilar *et al.* *Transmission of light in deep sea water at the site of the ANTARES Neutrino Telescope*, Astrop. Phys. **23** (2005) 131-155, eprint: astro-ph/0412126.
- [40] P. Amram *et al.*, *Sedimentation and fouling of optical surfaces at the ANTARES site*, Astrop. Phys. **19** (2003) 253-267.
- [41] P. Amram *et al.*, *The ANTARES optical modules*, Nucl. Instrum. & Meth. A **484** (2002) 369-383.

#### A4) NEMO Experiment

- [42] S. Aiello *et al.*, *Sensitivity of an underwater Cerenkov km<sup>3</sup> telescope to TeV neutrinos from Galactic Microquasars*, Astropart. Phys. **28** (2007) 1-9 and e-Print: astro-ph/0608053.
- [43] G. Riccobene *et al.*, *Deep seawater inherent optical properties in the Southern Ionian Sea*, Astrop. Phys. **27** (2007) 1-9.

#### A5) VERITAS and WIYN Experiments

- [44] V.A. Acciari *et al.*, *TeV and Multi-wavelength Observations of Mrk 421 in 2006-2008*, Subm. to Astrop. J. (2010).
- [45] D. Horan *et al.*, *Multiwavelength Observations of Mrk 421 in 2005-2006*, Astrophys. J. **695** (2009) 596-618.

#### A6) MACRO Experiment

- [46] M. Ambrosio *et al.*, *Measurement of Atmospheric Muon Neutrino Oscillations, Global Analysis of the Data Collected with MACRO Detector*, Eur. Phys. J **C36** (2004) 323-339 (**corresponding author**), (**TopCite = 50+**, **cited 85 times**).
- [47] M. Ambrosio *et al.*, *Search for stellar gravitational collapses with the MACRO detector*, Eur. Phys. J. **C37** (2004) 265-272.
- [48] M. Aglietta *et al.*, EAS-TOP and MACRO Collaborations, *The cosmic ray proton, helium and CNO fluxes in the 100-TeV energy region from TeV muons and EAS atmospheric Cherenkov light observations of MACRO and EAS-TOP*, Astrop. Phys. **21** (2004) 223-240.
- [49] M. Aglietta *et al.*, EAS-TOP Collaboration and MACRO Collaboration, *The primary cosmic ray composition between 10<sup>15</sup> and 10<sup>16</sup> eV from extensive air shower electromagnetic and TeV muon data*, Astropart. Phys. **20** (2004) 641-652.
- [50] M. Ambrosio *et al.*, *Atmospheric neutrino oscillations from upward through-going muon multiple scattering in MACRO*, Phys. Lett. **B566** (2003) 35-44 (**TopCite = 50+**, **cited 99 times**).

- [51] M. Ambrosio *et al.*, *Search for diffuse neutrino flux from astrophysical sources with MACRO*, *Astrop. Phys.* **19** (2003) 1-13.
- [52] M. Ambrosio *et al.*, *Moon and Sun shadowing effect in the MACRO detector*, *Astrop. Phys.* **20** (2003) 145-156.
- [53] M. Ambrosio *et al.*, *Measurement of the residual energy of muons in the Gran Sasso underground laboratories*, *Astrop. Phys.* **19** (2003) 313-328.
- [54] M. Ambrosio *et al.*, *Search for cosmic ray sources using muons detected by the MACRO experiment*, *Astrop. Phys.* **18** (2003) 615-627.
- [55] M. Ambrosio *et al.*, *The search for the sidereal and solar diurnal modulations in the total MACRO muon data set*, *Phys. Rev.* **D67** 042002 (2003).
- [56] M. Ambrosio *et al.*, *Muon energy estimate through multiple scattering with the MACRO detector*, *Nucl. Instrum. & Meth.* **A 492** (2002) 376-386.
- [57] M. Ambrosio *et al.*, *A combined analysis technique for the search for fast magnetic monopoles with the MACRO detector*, *Astrop. Phys.* **18** (2002) 27-41.
- [58] M. Ambrosio *et al.*, *Search for nucleon decays induced by GUT magnetic monopoles with the MACRO experiment*, *Eur. Phys. J.* **C26** (2002) 163-172.
- [59] M. Ambrosio *et al.*, *Final results of magnetic monopole searches with the MACRO experiment*, *Eur. Phys. J.* **C 25** (2002) 511-522, (**TopCite = 50+**, **cited 61 times**).
- [60] M. Ambrosio *et al.*, *The MACRO detector at Gran Sasso*, *Nucl. Instrum. & Meth.* **A 486** (2002) 663-707.
- [61] M. Ambrosio *et al.*, *Neutrino astronomy with the MACRO detector*, *Astrophys. J.* **546** (2001) 1038-1054 (**corresponding author, Top-cite=50+, cited 66 times**).
- [62] M. Ambrosio *et al.*, *Matter effects in upward going muons and sterile neutrino oscillations*, *Phys. Lett.* **B517** (2001) 59 (**Top-cite=100+, cited 202 times**).
- [63] M. Ambrosio *et al.*, *Low-energy atmospheric muon neutrinos in MACRO*, *Phys. Lett.* **B478** (2000) 5-13 (**Top-cite=100+, cited 114 times**).
- [64] M. Ambrosio *et al.*, *A search for lightly ionizing particles with the MACRO detector*, *Phys. Rev.* **D62** (2000) 052003.
- [65] M. Ambrosio *et al.*, *Nuclearite search with the MACRO detector at Gran Sasso*, *Eur. Phys. J.* **C 13** (2000) 453-458.



- [66] M. Ambrosio *et al.*, *Limits on dark matter WIMPs using upward-going muons in the MACRO detector*, Phys. Rev. **D 60** (1999) 82002, 1-10 (**corresponding author, TopCite 50+, cited 78 times**).
- [67] M. Ambrosio *et al.*, *High statistics measurement of the underground muon pair separation at Gran Sasso*, Phys. Rev. **D60** (1999) 032001, 1-13.
- [68] M. Ambrosio *et al.*, *Measurement of the energy spectrum of underground muons at Gran Sasso with a transition radiation detector*, Astrop. Phys. **10** (1999) 11-20.
- [69] M. Ambrosio *et al.*, *Observation of the shadowing of cosmic rays by the Moon using a deep underground detector*, Phys. Rev. **D59** (1999) 012003, 1-7.
- [70] M. Ambrosio *et al.*, *The observation of up-going charged particles produced by high energy muons in underground detectors*, Astrop. Phys. **9** (1998) 105-117.
- [71] M. Ambrosio *et al.*, *Measurement of the atmospheric neutrino induced upgoing muon flux using MACRO*, Phys. Lett. **B434** (1998) 451-457 (**Top-cite=250+, cited 443 times**).
- [72] M. Ambrosio *et al.*, *Real time supernova neutrino burst detection with MACRO*, Astrop. Phys. **8** (1998) 123-133.
- [73] M. Ambrosio *et al.*, *High energy cosmic ray physics with underground muons in MACRO. I. Analysis methods and experimental results*, Phys. Rev. **D 56** (1997) 1407-1417.
- [74] M. Ambrosio *et al.*, *High energy cosmic ray physics with underground muons in MACRO. II. Primary spectra and composition*, Phys. Rev. **D 56** (1997) 1418-1436.
- [75] M. Ambrosio *et al.*, *Magnetic monopole search with the MACRO detector at Gran Sasso*, Phys. Lett. **B 406** (1997) 249-255.
- [76] M. Ambrosio *et al.*, *Seasonal variations in the underground muon intensity as seen by MACRO*, Astrop. Phys. **7** (1997) 109-124.
- [77] M. Ambrosio *et al.*, *The performance of MACRO liquid scintillator in the search for magnetic monopoles with  $10^{-3} < \beta < 1$* , Astrop. Phys. **6** (1997) 113-128.
- [78] S. Ahlen *et al.*, *Atmospheric neutrino flux measurement using upgoing muons*, Phys. Lett. **B 357** (1995) 481-486 (**Top-cite=100+, cited 115 times**).
- [79] M. Ambrosio *et al.*, *Performance of the MACRO streamer tube system in the search for magnetic monopoles*, Astrop. Phys. **4** (1995) 33-43.
- [80] M. Ambrosio *et al.*, *Vertical muon intensity measured with MACRO at the Gran Sasso laboratory*, Phys. Rev **D 52** (1995) 3793-3802, (**TopCite = 50+, cited 73 times**).

- [81] M. Aglietta *et al.*, EAS-TOP Collaboration and MACRO Collaboration, *Study of the primary cosmic ray composition around the knee of the energy spectrum*, Phys. Lett. **B 337** (1994) 376-382.

#### A7) Papers with few authors

- [82] J. Braun, M. Baker, J. Dumm, C. Finley, A. Karle and T. Montaruli, *Time-Dependent Point Source Search Methods in High Energy Neutrino Astronomy*, accepted by Astrop. Phys. (2009).
- [83] J. Braun, F. J. Dumm, F. De Palma, C. Finley, A. Karle, T. Montaruli, *Methods for point source analysis in high energy neutrino telescopes*, Astropart. Phys. **29** (2008) 299 and arXiv:0801.1604.
- [84] P. Berghaus, T. Montaruli and J. Ranft, *Charm production in DPMJET*, JCAP06 (2008) 003, and arXiv:0712.3089
- [85] L. Anchordoqui, F. Halzen, T. Montaruli, A. O'Murchadha, *Neutrino Flux from Cosmic Ray Accelerators in the Cygnus Spiral Arm of the Galaxy*, Phys. Rev. **D76** (2007) 067301.
- [86] M. Cirelli, N. Fornengo, T. Montaruli, I. Sokalski, A. Strumia, *Spectra of Neutrinos from Dark Matter Annihilations*, Nucl. Phys. **B727** (2005), 99-138, eprint: hep-ph/0506298.
- [87] G. Battistoni, A. Ferrari, T. Montaruli and P.R. Sala, *The atmospheric neutrino flux below 100 MeV calculation: the FLUKA results*, Astrop. Phys. **23** (2005) 526-534.
- [88] A. L'Abbate, T. Montaruli, I. Sokalski, *Effect of neutral current interactions on high energy muon and electron neutrino propagation through the Earth*, Astrop. Phys. **23** (2005) 57-63, eprint: hep-ph/0406133.
- [89] E. Bugaev, T. Montaruli, Y. Shlepin and I. Sokalski, *Propagation of tau neutrinos and tau leptons through the Earth and their detection in underwater/ice neutrino telescopes*, Astrop. Phys. **21** (2004) 491-509.
- [90] G. Battistoni, A. Ferrari, T. Montaruli and P.R. Sala, *The FLUKA atmospheric neutrino flux calculation*, Astrop. Phys. **19** (2003) 269-290, Erratum-ibid. **19** (2003) 291-294, (**TopCite = 50+**, **cited 65 times**)
- [91] G. Battistoni, A. Ferrari, T. Montaruli and P. R. Sala, *Comparison of the FLUKA calculation with CAPRICE94 data on muons in atmosphere*, Astrop. Phys. **17** (2002) 477-488.
- [92] G. Battistoni, A. Ferrari, P. Lipari, T. Montaruli, P. R. Sala and T. Rancati, *A 3-Dimensional Calculation of Atmospheric Neutrino Flux*, Astrop. Phys. **12** (2000) 315-333 (**Top-cite=100+**, **cited 115 times**).
- [93] M. Ambriola, R. Bellotti, F. Cafagna, M. Castellano, F. Ciacio, M. Circella, C.N. De Marzo and T. Montaruli, *Cosmic-ray discrimination capabilities of  $\Delta E - E$  silicon nuclear telescopes using neural networks*, Nucl. Instr. & Meth. in Phys. Res. A **440** (2000) 438-445.

- [94] E. Barbarito et al., *A large area transition radiation detector to measure the energy of muons in the Gran Sasso underground laboratory*, Nucl. Instr. & Meth. in Phys. Res. **A 365** (1995) 214-223.

## B) Papers in special journal series or in public databases

### B1) Proposals of Experiments

- [95] N. Antoniou et al., The NA49 Collaboration, *Study of hadron production in hadron nucleus and nucleus nucleus collisions at the CERN SPS*, CERN-SPSC-2006-034 (2006).
- [96] D. Isenhower et al., The MIPP Collaboration, *Proposal to upgrade the MIPP experiment*, eprint: hep-ex/0609057 (2006).

### B2) Models and Calculations

- [97] F. Halzen, H. Landsman, T. Montaruli, *TeV Photons and Neutrinos from giant soft-gamma repeater flares*, astro-ph/0503348 (2005), final paper in preparation.
- [98] F. A. Aharonian, L. Anchordoqui, D. Khangulyan and T. Montaruli, *LS 5039 a potential TeV neutrino source*, J. Phys. Conf. Ser. **39** (2006) 408, eprint: astro-ph/0508658.

## C) Conference Proceedings

- [99] T. Montaruli for the ANTARES Collaboration, *The ANTARES underwater neutrino telescope*, Proc. of 7<sup>th</sup> Alexander Friedmann International Seminar on Gravitation and Cosmology, to appear in Int. Journal of Modern Physics A (2008).
- [100] T. Montaruli for the IceCube Collaboration, *First Results of the IceCube Observatory on High Energy Neutrino Astronomy*, Journal of Physics (Conf. Series) **120** (2008) 062009.
- [101] J. Braun, A. Karle, T. Montaruli, for the IceCube Collaboration, *Neutrino point source search strategies for AMANDA-II and results from 2005*, 30<sup>th</sup> Int. Cosmic Ray Conf., ICRC 2007, Merida, Mexico, Jul. 2007, e-print arXiv:0711.0353, pag 99-102.
- [102] C. Finley, J. Dumm and T. Montaruli for the IceCube Collaboration, *Nine-string IceCube point source analysis*, 30<sup>th</sup> Int. Cosmic Ray Conf., ICRC 2007, Merida, Mexico, Jul. 2007, e-print arXiv:0711.0353, pag. 107-110
- [103] T. Montaruli, *Review on Neutrino Telescopes*, Nucl. Phys. **B** (Proc. Suppl.) **165** (2006) 161-171, Proc. of CRIS 2006 - Cosmic Ray International Seminar (2006).
- [104] T. Montaruli for the iceCube Collaboration, *IceCube: The state of the art*, to appear in Proc. of Vulcano Workshop 2006: Frontier Objects in Astrophysics and Particle Physics, Vulcano, Italy, 22-27 May 2006, sub. to Italian Phys.Soc.Proc., e-Print Archive: astro-ph/0608140.

- [105] M. Bayer, J. Dumm, K. Larson and T. Montaruli, *Joint multi-wavelength observations of blazars with WIYN-VERITAS-IceCube*, J. Phys. Conf. Ser. **60** (2007) 300-302, Proc. of 2<sup>nd</sup> TeV Particle Astrophysics Conference, Madison, Wisconsin, 28-31 Aug. 2006.
- [106] D. Steele *et al.*, *Results from the Blazar Monitoring Campaign at the Whipple 10m Gamma-ray Telescope*, Proc. of ICRC2007, Merida, Mexico, Jul. 2007 and arXiv:0709.3869.
- [107] G. Battistoni, R. Ganugapati, A. Karle, J.L. Kelley and T. Montaruli, *Comparison of high energy interaction models used for atmospheric shower simulations above 1 TeV*, J. Phys. Conf. Ser. **60** (2007) 330-333, Proc. of 2<sup>nd</sup> TeV Particle Astrophysics Conference, Madison, Wisconsin, 28-31 Aug. 2006.
- [108] T. Montaruli for the ANTARES Collaboration, *The ANTARES Neutrino Telescope: exploring the universe from the sea abyss*, AIP Conf. Proc. **842** (2006) 865-867, Proceedings of PANIC2005, Santa Fe, NM, Oct. 2005.
- [109] T. Montaruli, *High Energy Neutrino Astrophysics*, Nucl. Phys. (Proc. Suppl.) **138** (2005) 502-509, Proc. of 8<sup>th</sup> Int. Workshop on Topics in Astroparticle and Underground Physics (TAUP 2003), 5-9 Sep. 2003, Seattle (WA).
- [110] A. Masiero and T. Montaruli, *Summary of Session 'Atlas Coelestis Neutrinos from heavens*, Nucl. Phys. (Proc. Suppl.) **145** (2005), 128-131, Proc. of Neutrino Oscillation Workshop (NOW2004), Otranto, Italy, Sep. 2004.
- [111] A. Achterberg *et al.*, The IceCube Collaboration, *The IceCube Collaboration: contributions to the Int. Cosmic Ray Conference (ICRC2005)*, Proceedings of the 29<sup>th</sup> Int. Cosmic Ray Conf. (ICRC2005), Pune, India, Aug. 2005 and astro-ph/0509330.
- [112] T. Montaruli, *Neutrino Astrophysics and Telescopes*, Eur. Phys. J. **A24S1** (2005) 103, Proc. of 8<sup>th</sup> Workshop on Electron Nucleus Scattering, Isola d'Elba, Italy, Jun 2004.
- [113] T. Montaruli, *Neutrino Astronomy with ANTARES*, Acta Phys. Polon. **B36** (2005) 509-518, Proc. of 34<sup>th</sup> Int. Symposium on Multiparticle Dynamics (ISMD 2004), Rohnert Park, California, 26 Jul - 1 Aug 2004, eprint: hep-ex/0410079.
- [114] G. Battistoni, A. Ferrari, T. Montaruli, P.R. Sala, *The atmospheric neutrino fluxes below 100-MeV: The FLUKA results*, Nucl. Phys. Proc. Suppl. **145** (2005) 128, Proc. of . Proc. of Neutrino Oscillation Workshop (NOW2004), Otranto, Italy, Sep. 2004.
- [115] E. Bugaev, T. Montaruli, I. Sokalski, *Astrophysical tau neutrinos and their detection by large neutrino telescopes*, Phys. Atom. Nucl. **67** (2004) 1177-1181.
- [116] T. Montaruli, *Report on the High-Energy Phenomena Sessions HE 2, HE 3.2-3.4: Neutrinos and Muons. Interactions, Particle Physics Aspects, Astroparticle Physics and Cosmology*, Invited/Highlights/Rapporteur Proc. of 28<sup>th</sup> Int. Cosmic Ray Conf. (ICRC2003), 31 Jul. -7 Aug. 2003, Tsukuba, Japan.

- [117] T. Montaruli, *Astrophysics Neutrino Detection*, Proc. of XV IFAE, Società Italiana di Fisica, Workshop on High Energy Physics, Lecce (Italy), 23-26 Apr. 2003.
- [118] T. Montaruli for the ANTARES Collaboration, *ANTARES Status Report*, Proc. of 28<sup>th</sup> Int. Cosmic Ray Conf. (ICRC2003), 31 Jul.-7 Aug. 2003, Tsukuba, Japan, pp. 1357-1360.
- [119] E. Bugaev, T. Montaruli, I. Sokalski, *Detection of tau neutrinos in underwater neutrino telescopes*, Proc. of 28<sup>th</sup> Int. Cosmic Ray Conf. (ICRC2003), 31 Jul.-7 Aug. 2003, Tsukuba, Japan, pp. 1381-1384.
- [120] G. Battistoni, A. Ferrari, T. Montaruli, P. R. Sala, *High energy extension of the FLUKA atmospheric neutrino flux*, Proc. of 28<sup>th</sup> Int. Cosmic Ray Conf. (ICRC2003), 31 Jul.-7 Aug. 2003, Tsukuba, Japan, pp. 1399-1402.
- [121] T. Montaruli for the ANTARES Collaboration, *The ANTARES project*, 31<sup>th</sup> Int. Conf. on High Energy Physics (ICHEP2002), Amsterdam, The Netherlands, 24-31 July 2002 and astro-ph/0207531.
- [122] T. Montaruli for the ANTARES Collaboration, *The ANTARES project*, Proc. of SPIE, Astronomical Telescopes and Instrumentation, 22-28 Aug. 2002, Waikoloa, Hawaii.
- [123] T. Montaruli for the ANTARES Collaboration, *Status report of the ANTARES Project*, Proc. of TAUP 2001, Laboratori Nazionali del Gran Sasso, Sep. 8-12, 2001, Nucl. Phys. **B** (Proc. Suppl.) **110** (2002) 513-515.
- [124] G. Battistoni, A. Ferrari, T. Montaruli and P.R. Sala, *Progresses in the validation of the FLUKA atmospheric neutrino flux calculation*, Nucl. Phys. **B** (Proc. Suppl.) **110** (2002) 336-338, Proc. of TAUP 2001, Laboratori Nazionali del Gran Sasso, 8-12 Sep. 2001.
- [125] T. Montaruli, *High energy neutrino astronomy and WIMP search results*, Proceeding of Int. Conf. "From Astronomy to Particle Physics", Oujda, Morocco, 21-23 Mar. 2000, in Cosmic Radiations: From Astronomy to Particle Physics, ed. G. Giacomelli et al., NATO Science Series, pp. 187-198 (2001).
- [126] T. Montaruli, *Women in physics*, Proc. of Int. Conf. "From Astronomy to Particle Physics", Oujda, Morocco, 21-23 Mar. 2000, pubblicato in Cosmic Radiations: From Astronomy to Particle Physics, ed. G. Giacomelli et al., NATO Science Series, pp. 344-348 (2001).
- [127] T. Montaruli for the MACRO Collaboration, *Results on high-energy atmospheric neutrino oscillations with MACRO*, in Proc. of 27<sup>th</sup> Int. Cosmic Ray Conf., Hamburg, Germany, Aug. 2001, HE2.03, available at <http://www.copernicus.org/icrc/HE2.03.oral.htm>
- [128] T. Montaruli for the MACRO Collaboration, *Neutrino Astronomy and Indirect Search for WIMPs*, in Proc. of 3<sup>rd</sup> Int. Conf. on Dark Matter in Astro- and Particle Physics: Dark 2000, Heidelberg, Germany, 10-16 July 2000, 688-698 (2000).

- [129] T. Montaruli, *High Energy Neutrino Astrophysics*, LXXXVI National Congress of Società Italiana di Fisica, Palermo, 6-11 Oct. 2000, p. 35 (2000).
- [130] T. Montaruli and F. Ronga for the MACRO Collaboration, *Search for a possible space-time correlation between high energy neutrinos and  $\gamma$ -ray bursts*, Proc. of "Rome'98 gamma-ray burst workshop", Astron. Astrophys. Suppl. Ser. **142** (2000) 1.
- [131] T. Montaruli, F. Cei, R. Pazzi and F. Ronga, for the MACRO Collaboration, *Neutrino Astrophysics with the MACRO detector*, Proc. of "Gamma-Ray Bursts in the Afterglow Era: 2nd Workshop", Roma, 17-20 Oct. 2000, in Springer-Verlag series "ESO Astrophysics Symposia".
- [132] T. Montaruli for the MACRO Collaboration, *The detection of Neutrinos, Monopoles and Indirect Search for WIMPs in the MACRO detector* Proc. of the 2<sup>nd</sup> Int. Conf. "Beyond the Desert '99 - Accelerator, Non-Accelerator and Space approaches into the Next Millenium", Castle Ringberg, Germany, 6-12 giugno 1999, ed. Institute of Physics, Bristol, 899-913 (1999).
- [133] T. Montaruli for the MACRO Collaboration, *Search for WIMPS using upward-going muons in MACRO*, Proc. of 26<sup>th</sup> Int. Cosmic Ray Conf. (ICRC 99), Salt Lake City, Utah, 17-25 Aug. 1999, HE Session 5.1, vol. **2** (1999) 277.
- [134] T. Montaruli for the MACRO Collaboration, *MACRO as a telescope for neutrino astronomy*, Proc. of 26<sup>th</sup> Int. Cosmic Ray Conf. (ICRC 99), Salt Lake City, Utah, 17-25 Aug. 1999, HE Session 4.2, vol. **2** (1999) 213.
- [135] T. Montaruli for the NEMO collaboration, *Capabilities of an underwater detector as a neutrino telescope and for the neutrino oscillation search*, Proc. of 26<sup>th</sup> Int. Cosmic Ray Conference (ICRC 99), Salt Lake City, Utah, 17-25 Aug. 1999 HE Session 6.3, vol. **2** (1999) 448.
- [136] T. Montaruli for the MACRO Collaboration, *The measurement of upward going muons using the MACRO detector*, Nucl. Phys. **B** (Proc. Suppl.) **70** (1999) 367-370, Proc. of TAUP 97, Laboratori Nazionali del Gran Sasso, 7-11 Sep. 1997.
- [137] 39 G. Battistoni, C. Bloise, D. Cavalli, A. Ferrari, T. Montaruli, T. Rancati, S. Resconi, F. Ronga, P.R. Sala, *A new calculation of atmospheric neutrino flux: the FLUKA approach*, Nucl. Phys. **B** (Proc. Suppl.) **70** (1999) 358-360, Proc. of TAUP 97, Laboratori Nazionali del Gran Sasso, 7-11 Sep. 1997.
- [138] T. Montaruli for the MACRO Collaboration, *Atmospheric and Astrophysics Neutrinos with MACRO*, 2<sup>nd</sup> Int. Conf. on Dark Matter in Astro- and Particle Physics: Dark Matter '98 Heidelberg, Germany; 20 - 25 Jul. 1998, ed. H. V. Klapdor-Kleingrothaus and L. Baudis, 790-804 (1998).
- [139] T. Montaruli for the MACRO Collaboration, *Atmospheric neutrinos with MACRO*, Proc. of Int. School of Subnuclear Physics "36<sup>th</sup> Course: from the Planck Length to the Hubble Radius", Centro Ettore Majorana, Erice, 29 Aug.-7 Sep. 1998, ed. A. Zichichi, World Scientific, 633-642.

- [140] T. Montaruli for the MACRO Collaboration, *Muon neutrinos with the MACRO detector at L.N.G.S.*, Proc. of the Erice School on Nucl. Physics, 19<sup>th</sup> Course "Neutrinos in Astro, Particle and Nuclear Physics", 16-24 Sep. 1997, Progr. Part. and Nucl. Phys. **40** (1998) 249-250, ed. by A Faessler.
  - [141] T. Montaruli, R. Bellotti, F. Cafagna, M. Circella, C.N. De Marzo, P. Lipari, *A simulation code to assist designing space missions of the Airwatch type*, 43<sup>rd</sup> SPIE Int. Symposium on Optical Science, Engineering, and Instrumentation : Hard X-ray and Gamma-ray Detector Physics and Applications San Diego,CA, USA; 19 - 24 Jul 1998, publ. in Proc. SPIE, 3446 qnd hep-ex/9810014.
  - [142] T. Montaruli for the MACRO Collaboration, *Upward-going muons and WIMPs in the MACRO detector*, Proc. of DM97, 1<sup>st</sup> Italian Conf. on Dark Matter, Trieste, Dec. 9-11, 1997, pp. 52-61, ed. Paolo Salucci, Studio Editoriale Fiorentino (1997).
  - [143] T. Montaruli for the MACRO Collaboration, *Indirect Search for WIMPs with the MACRO detector*, Proc. of the 25<sup>th</sup> Int. Cosmic Ray Conf., Durban, South Africa, 28 Jul.-10 Aug. 1997, Vol. **7**, HE Sessions 4-6, 185-188.
  - [144] T. Montaruli for the MACRO Collaboration, *Neutrino induced upward-going muons and WIMP search in the MACRO experiment*, in Dark Matter in Astro- and particle physics DARK '96, Heidelberg, Germany, 16 - 20 Sep. 1996, ed. H. V. Klapdor-Kleingrothaus & Y. Ramachers, pp. 695-703 (1996).
  - [145] T. Montaruli for the MACRO Collaboration, *Search for neutrinos from the Sun and the Earth with the MACRO detector*, Nucl. Phys. B (Proc. Suppl.) **48** (1996) 87-90, Proc. of TAUP 95, Toledo, Spain, 17-21 Sep. 1995.
  - [146] T. Montaruli for the MACRO Collaboration, *Neutrino induced upgoing muons in MACRO*, Proceedings of Eighth "Rencontres de Blois", Château de Blois, France, Jun. 8-12, 1996, in "Neutrinos, Dark Matter and the Universe", ed. by T. Stolarczyk, J. Trân Thanh Vân, F. Vannucci, 299-300 (1996).
- D) Books** *TeV particle astrophysics. Proceedings, 2<sup>nd</sup> Workshop, Madison, USA, August 28-31, 2006*, editors: Francis Halzen, Albrecht Karle, T. Montaruli, J. Phys. Conf. Ser. 60 (2006) 1-345.