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Personal

Born in Torino, Italy, on February 27, 1965

Italian citizen

Main interests

Astro-particle physics, scientific policies and innovation, communication and outreach.

Education

May 2011: Master of Business Administration, University of Warwick, UK.

Nov. 1993 - Nov. 1996: PhD in Physics at University of L'Aquila, Italy. Subject: Experimental, ground-based gamma ray astronomy with air Cherenkov imaging telescopes.

July 1991 - July 1993: Postgraduate fellow of Istituto Nazionale di Fisica Nucleare (INFN).

Oct. 1983 - Oct. 1990: Degree in Physics; University of Torino. Final mark: 110/110 cum laude. Subject of the thesis: study of high energy cosmic rays with the EAS-TOP experiment at the Gran Sasso Laboratory.

Civil Service

Jan. 1987 - Sept. 1988. Duties: Office work at Movimento Popolare, Milano.

Employment and scientific activity

1997 to present: researcher (associate professor level) at the Gran Sasso Laboratory (LNGS) of the National Institute for Nuclear Physics (INFN). My main research interests are cosmic rays, gamma ray astronomy, dark matter, noble liquids and imaging detectors.
I have been involved in the following projects:

ICARUS experiment [1] (1996 to present).

AUGER cosmic rays experiment (2003 - 2009) [2, 3].

XENON dark matter program (2005 to present) [4].

EAS-TOP cosmic rays experiment at Gran Sasso(1989-2000) [5, 6, 7, 8, 9].

I am referee of peer reviewed journals.

I am strongly involved in the scientific outreach programs of INFN.

Managerial experience

I have been member of the INFN "Commissione Scientifica Nazionale II" (CSN2) financial committee from July 2003 to September 2009. This committee manages the funds for non-accelerator and astroparticle physics, which are about 16MEuros/year. The CSN2 meets four times a year, and evaluates, from the scientific and financial point of views, new proposals and ongoing projects. As a representative of LNGS inside this committee I had to directly manage about 50,000 Euros yearly for capital and travel expenses of the Laboratory researchers.

Since 2004 I am member of the INFN 'evaluation group', a top management structure who is responsible for the collection and handling of the data concerning the performance evaluation of INFN as a research organisation.

From 2004 to 2009 I have been referee of the ANTARES ([10] and NEMO ([11]) experiments: two projects for the deployment of neutrino telescopes in the depths of the Mediterranean sea.

Member of the LNGS Laboratory Council from 2003 to 2009.

Member of the project design team and of the technical coordination committee for the management of EU funds granted through the Regione Abruzzo [12, 13].

Member of the committee for the space management at LNGS.

Member of the local organizing committee of the TAUP 2009 conference ([14]).

I usually represent the Gran Sasso Laboratory in formal occasions such as interviews with journalists, public debates, and meetings with authorities.

Immediately after the earthquake that hit the area of L'Aquila on April 6th, 2009, I helped the Director of LNGS handling the subsequent crisis and acted on his behalf on several occasions.

Proposals and Projects

XENON1T: Co-author of the proposal for the next phase of the XENON project at Gran Sasso , and co-PI for the participation of INFN to the XENON project, September 2009 - April 2010 [15]. The proposal is presently in the evaluation process and we have been granted a start-up grant of 40,000 Euros.

DARWIN: DARk matter WImp search with Noble liquids, ([16]). Design study for a next-generation noble liquid facility in Europe submitted in response to the first ASPERA [17] common call). In that project, I am responsible of the task concerning the design of effective shields for ton-scale Dark Matter experiments. The proposal has been funded with 200,000 Euros.

Co-author of the collaboration program between Regione Abruzzo and INFN aimed to strengthen the links between INFN and the Abruzzo productive sector [12, 13]. Through this program we have been granted, up to now, about 3M Euros for educational, training, and outreach purposes.

Member of the project team for the design of a new, top level academic facility at L'Aquila in collaboration with OECD and INFN, [18] in the framework of a program to relaunch the regional economy after the earthquake that hit the region on April 6th, 2009.

Teaching experiences

1993/94 member of the teaching staff of General Physics I, (Faculty of Chemistry, University of Torino) (main teacher: Prof. G Bologna).

1999/2000: teaching for the laboratory course of the 4th year Physics students (University of L'Aquila, main teacher: Prof Gianni Piano Mortari).

Advisor of doctoral theses ([19, 20]).

Hardware skills

Detectors for particle physics. Cryogenics and vacuum technology. Noble gases/liquids purification.

Software skills

Code writing in C/C++, Fortran, use of ROOT analysis package, knowledge of Mac OS, Windows and Linux at administrator level, image processing.

Language skills

Native language: Italian.
Fluent English and French. Good knowledge of Spanish. Basic knowledge of German.

Talks, seminars and public presentations

SATEXPO 2009 Public fair of space applications and technologies: "The CNGS project: the neutrino run towards Gran Sasso", invited presentation, Rome fair, March 2009.

"Abruzzo made in Italy", public debate on the Abruzzo territorial marketing, Pescara, February 2008.

"The XENON experiment at the Gran Sasso Laboratory", invited seminar, Lecce University, May 2008.

"Physics on the boat", outreach initiative for high school students, Ancona, November 2007.

Rencontres de MORIOND 2005: "Status and Performances of the AUGER Surface Detector Array", Les Arcs, France, 2005

TAUP 2003 Conference: "MINOS, OPERA, ICARUS" (invited talk), Seattle, 2003.

Imaging 2003 Conference : "The ICARUS T600 Liquid Argon Time Projection Chamber", Stockholm, 2003.

Frontier objects in Astrophysics, Vulcano Workshop: "Atmospheric and Solar Neutrino Detection with the ICARUS T600 Module", Vulcano, Italy, 2002

"Cherenkov light measurements with the EAS-TOP telescopes", colloquium at Max-Planck Institute, Heidelberg, October 25th, 2000

"The ICARUS liquid Argon TPC and the T600 detector", invited seminar at Institute of Nuclear Physics, Warsaw, April 2002.

"Icarus: a status report", seminar, LNGS, 2000.

Frontier Objects for Frontier Physics: VIII Pisa meeting, "Operation of a 10 m^3 ICARUS module", Isola d'Elba, May 2000.

"Gamma ray astronomy with the Cherenkov telescopes of EAS-TOP", invited lecture at the International Baksan School "Particles and Cosmology", 1997.

TAUP 1997 Conference : "Solar neutrino detection with the ICARUS experiment and the neutron background measurement", LNGS, 1997.

XXIV International Cosmic Ray Conference, Rome: "VHE observations of the Crab Nebula from the Cherenkov array of EAS-TOP", 1995.

Congress of the European Physical Society,: Gamma- Ray Astronomy with the Cherenkov detector of EAS-TOP, CERN, 1992.

Publications

See dedicated file.

References

[1] ICARUS, S. Amerio et al., Design, construction and tests of the ICARUS T600 detector, Nucl. Instrum. Meth. A527 (2004) 329.

[2] The Pierre Auger, J. Abraham et al., Calibration and Monitoring of the Pierre Auger Observatory, (2009), 0906.2358.

[3] Pierre Auger, M. Aglietta et al., Calibration of the surface array of the Pierre Auger Observatory, Presented at 29th International Cosmic Ray Conference (ICRC 2005), Pune, India, 3-11 Aug 2005.

[4] XENON, J. Angle et al., First Results from the XENON10 Dark Matter Experiment at the Gran Sasso National Laboratory, Phys. Rev. Lett. 100 (2008) 021303, 0706.0039.

[5] The MACRO, M. Aglietta et al., The primary cosmic ray composition between 10**15-eV and 10**16-eV from extensive air showers electromagnetic and TeV muon data, Astropart. Phys. 20 (2004) 641, astro-ph/0305325.

[6] EAS-TOP and MACRO, M. Aglietta et al., Study of the primary cosmic ray composition in the knee region with EAS-TOP and MACRO, Prepared for 25th International Cosmic Ray Conference (ICRC 97), Durban, South Africa, 28 Jul - 8 Aug 1997.

[7] EAS-TOP, M. Aglietta et al., Constraints on the PeV cosmic ray composition and interaction models from coincident EAS-TOP and MACRO data, Contributed to Int. Cosmic Ray Conf., Calgary, Canada, Jul 19-24, 1993.

[8] EAS-TOP, M. Aglietta et al., The shapes of the atmospheric Cherenkov light images from extensive air showers, Astropart. Phys. 6 (1997) 143.

[9] EAS-TOP, M. Aglietta et al., EAS Cherenkov at Gran Sasso: Correlated observations at the surface and with deep underground events, Nuovo Cim. A105 (1992) 1807.

[10] Antares experiment web site, http://antares.in2p3.fr/Overview/index.html, 2009.

[11] E. Migneco et al., Recent achievements of the NEMO project, Nucl. Instrum. Meth. A588 (2008) 111.

[12] 2007, Collaboration project between the Abruzzo Regional Government and LNGS on advanced training. About 1.5 millions of euros of EU FSE funds have been granted to INFN, to make available fellowships, training courses, outreach activities.

[13] 2008, Evolution based on the success of the preceding project, and realized in the framework of the 2007-2013 FSE funding program. More funds have been granted (2.5 millions of euros) and the program has been expanded.

[14] Taup 2009 web page, http://taup2009.lngs.infn.it/, 2009.

[15] F. Arneodo et al., Proposal for the participation of infn groups to the xenon programme, 2009, Document presented to the INFN scientific committee CSN2 in September 2009.

[16] Design study of a next-generation noble liquid dark matter facility in europe, 2009, Prepared for: First ASPERA Common Call for Proposals.

[17] Aspera web site, http://www.aspera-eu.org, 2009.

[18] L'aquila earthquake: Re-launching the economy, http://www.oecd.org, 2009.

[19] A. Ferella, Study of the Electron Lifetime in a dual-phase Xenon Time Projection Chamber for Dark Matter Research, PhD thesis, Università de L'Aquila, Italy, 2006.

[20] S. Fattori, Study of Radioactive Background Minimization for a 1 Ton Module of the XENON Experiment, PhD thesis, Università de L'Aquila, Italy, 2009.

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