

# CURRICULUM VITAE ET STUDIORUM

Roberto Aloisio

## Present Position

Associate Professor – Gran Sasso Science Institute (GSSI)

Viale F. Crispi 7, I-67100 L'Aquila, Italy

E-mail: [roberto.aloisio@gssi.it](mailto:roberto.aloisio@gssi.it)

Web: [www.gssi.it](http://www.gssi.it)

Phone: +39 0862 4280245

## Career

2011-2016: Researcher, INAF – Osservatorio Astrofisico Arcetri – Firenze (Italy)

2005-2011: Researcher, INFN – Laboratori Nazionali Gran Sasso – L'Aquila (Italy)

2002-2005: Post Doc, INFN – Laboratori Nazionali Gran Sasso – L'Aquila (Italy)

2002: Visiting scholar at the Kavli Institute and at the Astronomy and Astrophysics Department of the University of Chicago (USA)

2001: Research Contract, Department of Physics University of Ferrara (Italy)

1999: Visiting PhD student Department of Theoretical Physics University of Zaragoza (Spain)

## Studies

16/02/2001: PhD in Physics University of L'Aquila (Italy)

10/10/1997: Laurea degree, 110/110 cum laude, University of L'Aquila (Italy)

## Awards

2016: distinguished former student of the Department of Physics of L'Aquila University, award assigned in occasion of the 50<sup>th</sup> anniversary of the foundation of the Department of Physics.

1996: annual scholarship for the Laurea thesis in theoretical physics. Award assigned and funded by the Italian Institute for Nuclear Physics (INFN).

## Scientific Interests

- Origin and propagation of cosmic rays, gamma rays and astrophysical neutrinos
- Theories of Dark Matter and its indirect detection
- Non thermal processes in astrophysics
- Theories with Lorentz invariance violations and quantum gravity regime

## Impact of the research activity

I have published more than 50 papers on international refereed journals (<http://goo.gl/2aSNkb>), most of which with no more than 1-2 co-authors, collecting more than 1700 citations with an average citations per paper of 35 and a Hirsch number  $H=24$ , as extracted from the SPIRES database (<http://goo.gl/KasDR>).

## Colloquia and Invited Talks (last five years)

- Invited review talk on “*High energy cosmic rays and the production of cosmogenic neutrinos and gamma rays*”, PAHEN international conference, Naples (Italy), September 25-27 2017.
- Invited review talk on “*The physics of ultra-high energy cosmic rays and the extreme universe frontier*”, JEM-EUSO meeting Chicago (USA), June 19-23 2017.

- Invited review talk on “*The physics of ultra-high energy cosmic rays: spectra, composition and the transition between galactic and extragalactic cosmic rays*”, international conference on ultra-high energy cosmic rays, Kyoto (Japan), October 11-14 2016.
- Invited talk on “*Neutrinos at extreme energies*”, 14<sup>th</sup> international conference on Topics in Astroparticle and Underground Physics (TAUP 2015), Torino (Italy), September 7-11 2015.
- Invited review talk on “*Ultra high energy cosmic rays and neutrinos*”, 9<sup>th</sup> Cosmic rays seminar: the status and the future of the UHE cosmic ray physics in the post LHC era, Gallipoli (Italy), September 14-16 2015.
- Invited review talk on “*Gamma ray astrophysics: the relation with cosmic rays and neutrinos*”, workshop on the future research on cosmic rays, La Palma, Canarias (Spain), August 26-29 2015.
- Invited talk on “*Ultra High Energy Cosmic Radiation*”, Neutrino Oscillation Workshop, Otranto (Italy), September 3-6 2014.
- Invited review talk on “*Cosmic Rays propagation*”, 40<sup>th</sup> COSPAR scientific assembly, Moscow (Russia), August 2-10 2014.
- Invited review talk on “*Cosmic Rays and Gamma Rays*”, SciNeGHE conference, Lisbon (Portugal), June 4-6 2014.
- Colloquium on “*Ultra High Energy Cosmic Rays*”, New York University at Abu Dhabi (United Arab Emirates), February 11 2014.
- Invited review talk on “*Ultra High Energy Cosmic Rays and Neutrinos*”, Snow Mass Conference – Cosmic Frontier, June 6-8 2013, Stanford (USA).
- Colloquium on “*Ultra High Energy Cosmic Rays Theories and Observations*”, IASF Bologna (Italy), May 22 2013.

### **Teaching activity**

- Member of the board of professors of the Astroparticle Physics PhD program of the Gran Sasso Science Institute, L’Aquila (Italy).
- Co-supervisor of two Laurea Thesis and four PhD Thesis University of L’Aquila and Gran Sasso Science Institute, L’Aquila (Italy).
- 2013-present: course on “High Energy Astrophysics”, Gran Sasso Science Institute, L’Aquila (Italy).
- 2012-2013: course on “High Energy Astrophysics”, University of L’Aquila (Italy).
- 2005-2008: lectures on “High Energy Astrophysics”, appointed as assistant of prof. A.F. Grillo, University of L’Aquila (Italy).
- 2002-2006: lectures on “Nuclear and sub-nuclear Physics”, appointed as assistant of prof. S. Petrerà, University of L’Aquila (Italy).

### **Activities for the Scientific Community**

- Co-editor, together with E. Coccia and F. Vissani, of the book (in press) “Multiple Messengers and Challenges in Astroparticle Physics”, published by the Springer Books publishing house.
- Convener of the session on “*Cosmic Rays*” of the conference “*Multi Messengers and Challenges in Astroparticle Physics*”, Gran Sasso Science Institute, L’Aquila (Italy), October 6-17 2014.
- Co-editor, together with E. Coccia, N. Fornengo and L. Pandola, of the proceedings of the 11<sup>th</sup> conference on *Topics in Astroparticle and Underground Physics* (TAUP), Rome (Italy), June 2009.

- Convener of the session on “*High energy Astrophysics*” of the 11<sup>th</sup> TAUP conference, Rome (Italy), June 2009.
- Convener of the session of “*Standard Model Tests in High Energy Astrophysics*” of the *International Symposium on Astroparticle Physics*, Golden Colorado (USA) May 2008.
- 2005-2009: coordinator of the seminars of the Gran Sasso National Laboratory
- Referee for: *Physical Review*, *Physical Review Letters*, *Astroparticle Physics*, *Journal of Cosmology and Astroparticle Physics (JCAP)*, *Astrophysical Journal* and *Astrophysical Journal Letters*.

### **Memberships, Working Groups and Projects Coordination**

- 2018-present: coordinator of the joint GSSI-University of L’Aquila-National Gran Sasso Laboratory group of INFN.
- 2018-present: coordinator of the GSSI Center for Urban Informatics and Modeling, a three years research project funded by the Italian government and focused on the city of L’Aquila.
- 2017-present: coordinator of the GSSI’s Internal Evaluation Committee.
- 2015-present: coordinator of the project *Open Data Ricostruzione*, a joint research project of GSSI and University of L’Aquila, appointed by the Italian government, on the reconstruction process after the earthquake of April 2009 (<http://opendataricostruzione.gssi.infn.it>).
- 2014-2016: convener of the working group on “*Cosmic Radiation*” in the framework of the “*What Next*” initiative of Istituto Nazionale Fisica Nucleare (INFN) (<https://agenda.infn.it/contributionListDisplay.py?confId=7588>).
- 2012-2016: member of the board of the Gran Sasso Science Institute (<http://www.gssi.infn.it/institute/organization>).
- 2012-present: member of the Cerenkov Telescope Array (CTA) collaboration (<http://www.cta-observatory.org>).
- 2009-2012: member of the scientific board of the “*CFA – Gran Sasso Center for Astroparticle Physics*”, a joint research center of the National Gran Sasso Laboratory and the Physics Departments of L’Aquila and Rome Tor Vergata Universities, funded by the EU through the program PO-FSE 2007-2013 (<http://cfa.lngs.infn.it/old/people.html>).
- July 2009: member of the National Gran Sasso Laboratory delegation to the workshop “*L’Aquila Earthquake: Re-launching the Economy*” organized by the OECD Directorate for Public Governance and Territorial Development and the Italian Minister of Economy (<http://www.oecd.org/regional/L'Aquila>).
- 2007-2009: principal investigator of the joint research group on “*Ultra High Energy Cosmic Rays and Neutrinos*” of the National Gran Sasso Laboratory (INFN) and the Arcetri Astrophysical Observatory (INAF), funded by the Italian Space Agency under the contract n. ASI-INAF I/088/06/0.
- 2006-2009: member of the board of the Italian Space Agency on “*Theoretical Studies in High Energy Astrophysics*” (WP 1300).
- 2004-2011: scientific secretary of the Scientific Committee of the Gran Sasso National Laboratory.
- 2001-2003: member of the Scientific Objective Working Group of the Extreme Universe Space Observatory (EUSO).