

# Chiara Perrina | Curriculum Vitae

Département de physique nucléaire et corpusculaire - Université de Genève  
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*“Est modus in rebus” (Orazio, Satire, I, 1, 106)*

## Personal Details

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**Name:** Chiara

**Surname:** Perrina

**Place of birth:** Ariano Irpino (AV), Italy

**Date of birth:** March 5<sup>th</sup>, 1988

**Citizenship:** Italian

**Spoken languages:** Italian, English

## Academic appointments

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**Post-doc position in Experimental Astroparticle Physics**

**Feb. 2016 – present**

*Département de physique nucléaire et corpusculaire, Université de Genève, Switzerland*

## Education

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**Ph.D. in Physics - High Energy Physics and Astrophysics (scholarship winner)**

**Nov. 2012 – Jan. 2016**

*“La Sapienza” University, Roma, Italy*

Final grade: Excellent

**Master’s Degree in Physics (Nuclear and Subnuclear Physics specialization)**

**Nov. 2010 – Nov. 2012**

*“La Sapienza” University, Roma, Italy*

Final grade: 110 *cum laude* (out of 110)

**Bachelor’s Degree in Physics**

**Nov. 2007 – Nov. 2010**

*“La Sapienza” University, Roma, Italy*

Final grade: 110 *cum laude* (out of 110)

**High School for Science**

**Sep. 2002 – Jul. 2007**

*Liceo Scientifico Statale “P.P.Parzanese”, Ariano Irpino (AV), Italy*

Final grade: 100 (out of 100)

## Ph.D. Thesis

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**Defendend on:** 22<sup>nd</sup> January 2016

**Title:** *Search for high energy down-going neutrino fluxes from cosmic sources with the ANTARES Neutrino Telescope*

**Advisor:** Prof. Antonio Capone

## Master Thesis

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**Defendend on:** 26<sup>th</sup> October 2012

**Title:** *Search for astrophysical sources of high energy neutrinos with the ANTARES telescope*

**Advisors:** Prof. Antonio Capone, Dr. Giulia De Bonis (Co-Advisor)

## Bachelor Thesis

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**Defendend on:** 12<sup>th</sup> November 2010

**Title:** *Detection of high energy astrophysical tau neutrinos at the Pierre Auger Observatory*

**Advisors:** Prof. Antonio Capone, Dr. Francesco Simeone (Co-Advisor)

## Conferences, Workshops and Schools (with Contribution)

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### YRM 2015

Oct. 12 – 14, 2015

*6<sup>th</sup> edition of the Young Researcher Meeting*

L'Aquila, Italy

**Contribution:** Search for point-like neutrino sources above the horizon with the ANTARES Neutrino Telescope. (Talk – proceeding published).

<http://www.yrmr.it/drupal/?q=content/6th-ymr-2015-laquila-program>

### VLVnT-2015

Sep. 14 – 16, 2015

*7<sup>th</sup> edition of the Very Large Volume Neutrino Telescope Workshop*

Roma, Italy

**Contribution:** The KM3NeT-IT Tower data acquisition and data transport electronics. (Co-Author of the talk on behalf of the KM3NeT-Italy Collaboration – proceeding in submission).

<https://indico.cern.ch/event/378423/session/10/contribution/80>

### ICRC 2015 - 34th International Cosmic Ray Conference

Jul. 30 – Aug. 6, 2015

*Den Haag, The Netherlands*

**Contribution:** Search for point-like neutrino sources above the horizon with the ANTARES Neutrino Telescope. (Poster on behalf of the ANTARES Collaboration – proceeding submitted).

<https://indico.cern.ch/event/344485/session/136/contribution/986>

### IFAE 2015 - Incontri di Fisica delle Alte Energie, XIV edizione

Apr. 8 – 10, 2015

*Roma, Italy*

**Contribution:** Ricerca di neutrini cosmici da sorgenti puntiformi con il Telescopio ANTARES. (Search for cosmic neutrinos from point-like sources with the ANTARES Telescope.) (Poster on behalf of the ANTARES Collaboration – proceeding submitted).

<https://agenda.infn.it/contributionListDisplay.py?confId=8681>

### NeuTel 2015 - XVI International Workshop on Neutrino Telescopes

Mar. 2 – 6, 2015

*Venezia, Italy*

**Contribution:** Search for ultra-high energy neutrinos from below and above the horizon with the ANTARES Telescope (Poster on behalf of the ANTARES Collaboration – proceeding published).

<https://agenda.infn.it/internalPage.py?pageId=8&confId=8620>

### NuPhys2014: Prospects in Neutrino Physics

Dec. 15 – 17, 2014

*London, United Kingdom*

**Contribution:** The ANTARES Neutrino Telescope. (Poster on behalf of the ANTARES Collaboration – proceeding published).

<https://indico.ph.qmul.ac.uk/indico/internalPage.py?pageId=11&confId=22>

### TMEX 2014 Theory Meeting Experiment 2014 :: Neutrinos And Cosmos

Sep. 3 – 5, 2014

*Warszawa, Poland*

**Contribution:** Recent results from the ANTARES neutrino telescope. (Talk on behalf of the ANTARES Collabora-

tion).

[http://www.roma1.infn.it/people/perrina/Conferences/TMEX2014\\_C\\_Perrina\\_talk.pdf](http://www.roma1.infn.it/people/perrina/Conferences/TMEX2014_C_Perrina_talk.pdf)

### ISAPP 2013

Jul. 14 – 23, 2013

#### ***International School on AstroParticle Physics (Neutrino Physics and Astrophysics)***

LSC, Canfranc-Estacion, Spain

**Contribution:** ANTARES and the search for astrophysical point sources of UHE neutrinos placed above the horizon. (Poster & Talk).

[http://www.lsc-canfranc.es/ISAPP2013/images/transparenties/Chiara\\_Perrina.pdf](http://www.lsc-canfranc.es/ISAPP2013/images/transparenties/Chiara_Perrina.pdf)

## Conferences, Workshops and Schools (without Contribution)

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### RICAP-14

Sep. 30 – Oct. 3, 2014

*5<sup>th</sup> Roma International Conference on AstroParticle Physics*

Noto, Sicily, Italy

### RICAP-13

May 22 – 24, 2013

*4<sup>th</sup> Roma International Conference on AstroParticle Physics*

Roma, Italy

### Introduction to Fortran 90

Jan. 22 – 25, 2013

*CINECA Course*

Roma, Italy

### Introduction to Scientific and Technical Computing in C++

Dec. 11 – 14, 2012

*CINECA Course*

Roma, Italy

### NOW 2012

Sep. 9 – 16, 2012

*Neutrino Oscillation Workshop*

Conca Specchiulla (LE), Italy

### RICAP-11

May 25 – 27, 2011

*3<sup>rd</sup> Roma International Conference on AstroParticle Physics*

Roma, Italy

## Scientific experiences and activities

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**Member of the ANTARES shift crew and the NEMO shift crew:** responsible of the operation, calibration and monitoring of the ANTARES detector and of the NEMO-Phase 2 Tower.

**Referee** for the “*Nuclear Instruments and Methods in Physics Research (Section A)*” journal.

**Referee** for the “*EPJ Web of Conferences*” journal.

**Editor** for the “*EPJ Web of Conferences*” journal.

**Member of the Local Organizing Committee for VLVnT-2015**, 7th edition of the Very Large Volume Neutrino Telescope Workshop (Sep. 14 – 16, 2015, Roma).

<https://indico.cern.ch/event/378423/page/2>

## Teaching activities

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### Lectures on Solar Neutrinos for *Astroparticle Physics* class

AY 2015/2016

For students of the Master's degrees in Physics and in Astronomy and Astrophysics

"La Sapienza" University, Roma, Italy

[http://www.roma1.infn.it/people/capone/Fisica\\_Astroparticellare/Lezioni\\_37&38.pdf](http://www.roma1.infn.it/people/capone/Fisica_Astroparticellare/Lezioni_37&38.pdf)

[http://www.roma1.infn.it/people/capone/Fisica\\_Astroparticellare/Lezioni\\_39&40.pdf](http://www.roma1.infn.it/people/capone/Fisica_Astroparticellare/Lezioni_39&40.pdf)

### **Mathematics lectures**

**AY 2015/2016**

*For students with additional educational requirements of the 1<sup>st</sup> year of the Bachelor's degree in Biology*

"La Sapienza" University, Roma, Italy

### **Teaching Assistant in Nuclear and Subnuclear Physics class**

**AY 2014/2015**

*For students of the 3<sup>rd</sup> year of the Bachelor's degree in Physics*

"La Sapienza" University, Roma, Italy

<http://www.roma1.infn.it/people/perrina/FNSNI.html>

### **Lectures on Solar Neutrinos for Astroparticle Physics class**

**AY 2014/2015**

*For students of the Master's degrees in Physics and in Astronomy and Astrophysics*

"La Sapienza" University, Roma, Italy

[http://www.roma1.infn.it/people/capone/Fisica\\_Astroparticellare\\_2015/Lezioni\\_25-26-27-28-29\\_Neutrini\\_Solari.pdf](http://www.roma1.infn.it/people/capone/Fisica_Astroparticellare_2015/Lezioni_25-26-27-28-29_Neutrini_Solari.pdf)

### **Tutor for the preparation of the dissertations for the Astrophysics Laboratory class**

**AY 2013/2014**

*For students of the 3<sup>rd</sup> year the Bachelor's degree in Physics and Astrophysics*

"La Sapienza" University, Roma, Italy

### **Teaching Assistant in Mechanics class**

**AY 2013/2014**

*For students of the 1<sup>st</sup> year of the Bachelor's degree in Physics*

"La Sapienza" University, Roma, Italy

<http://www.roma1.infn.it/people/perrina/meccanica.html>

### **Teaching Assistant in Nuclear and Subnuclear Physics class**

**AY 2013/2014**

*For students of the 3<sup>rd</sup> year of the Bachelor's degree in Physics*

"La Sapienza" University, Roma, Italy

[http://www.roma1.infn.it/people/perrina/FNSNI\\_14.html](http://www.roma1.infn.it/people/perrina/FNSNI_14.html)

### **Lectures on Solar Neutrinos for Astroparticle Physics class**

**AY 2013/2014**

*For students of the Master's degrees in Physics and in Astronomy and Astrophysics*

"La Sapienza" University, Roma, Italy

[http://www.roma1.infn.it/people/capone/Fisica\\_Astroparticellare\\_2014/Lezioni\\_45&46.pdf](http://www.roma1.infn.it/people/capone/Fisica_Astroparticellare_2014/Lezioni_45&46.pdf)

## **Funding grants**

### **"Angelo Della Riccia" Grant**

**AY 2015/2016**

*Awarded by "Fondazione Angelo Della Riccia"*

*in favour of young Italian scientists in Microphysics wishing to go abroad for studies and research.*

<http://theory.fi.infn.it/casalbuoni/dellariccia/>

### **Bando Ricerca Scientifica Anno 2015: Progetti Avvio alla ricerca**

**Jul. 2015**

*Awarded by "La Sapienza" University of Roma.*

## Awards

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### Premio «TITO MAIANI» per il 2015

Jun. 2015

*Awarded by Accademia Nazionale dei Lincei.*

Graduation prize in Physics

### Premio ARAP in Fisica delle Particelle Elementari

Jun. 2012

*Awarded annually by ARAP (Roman Association for Astro-Particles)*

to outstanding Master's students in Physics with specialization in Particle Physics.

**Talk title:** "Measurement of the top quark-pair production cross section at LHC"

## Computer skills

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**Programming Languages:** C (advanced), C++ (advanced), Fortran90 (basic), Python (basic)

**Markup Languages:**  $\LaTeX$ (advanced), HTML (intermediate)

**Applications:** Microsoft Office (advanced), Open Office (advanced)

**Operating Systems:** Microsoft (intermediate), MAC (intermediate), Linux (intermediate)

## List of publications

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### Journal papers.....

**1:** Adrián-Martínez, S. *et al.* Time calibration with atmospheric muon tracks in the ANTARES neutrino telescope. *Astropart. Phys.*, **78** (2016), 43-51. arXiv:1507.04182, <http://dx.doi.org/10.1016/j.astropartphys.2016.02.001>.

**2:** Adrián-Martínez, S. *et al.* Long term monitoring of the optical background in the Capo Passero deep-sea site with the NEMO tower prototype. *Eur. Phys. J.*, **C76** (2016), 68. arXiv:1507.05024, <http://dx.doi.org/10.1140/epjc/s10052-016-3908-0>.

**3:** Adrián-Martínez, S. *et al.* Search for muon-neutrino emission from GeV and TeV gamma-ray flaring blazars using five years of data of the ANTARES telescope. *JCAP*, **1512** (2015), 014. arXiv:1506.07354, <http://dx.doi.org/10.1088/1475-7516/2015/12/014>.

**4:** Adrián-Martínez, S. *et al.* Search of Dark Matter Annihilation in the Galactic Centre using the ANTARES Neutrino Telescope. *JCAP*, **1510** (2015), 068. arXiv:1505.04866, <http://dx.doi.org/10.1088/1475-7516/2015/10/068>.

**5:** Adrián-Martínez, S. *et al.* ANTARES Constrains a Blazar Origin of Two IceCube PeV Neutrino Events. *Astron. Astrophys.*, **576** (2015), L8. arXiv:1501.07843, <http://dx.doi.org/10.1051/0004-6361/201525670>.

**6:** Aiello, S. *et al.* Measurement of the atmospheric muon depth intensity relation with the NEMO Phase-2 tower. *Astropart. Phys.*, **66** (2015), 1. arXiv:1412.0849, <http://dx.doi.org/10.1016/j.astropartphys.2014.12.010>.

**7:** Adrián-Martínez, S. *et al.* Constraining the neutrino emission of gravitationally lensed Flat-Spectrum Radio Quasars with ANTARES data. *JCAP*, **1411** (2014), 017. arXiv:1407.8525, <http://dx.doi.org/10.1088/1475-7516/2014/11/017>.

**8:** Adrián-Martínez, S. *et al.* Deep sea tests of a prototype of the KM3NeT digital optical module. *Eur. Phys. J.*, **C74** (2014), 3056. arXiv:1405.0839, <http://dx.doi.org/10.1140/epjc/s10052-014-3056-3>.

**9:** Adrián-Martínez, S. *et al.* Searches for Point-like and extended neutrino sources close to the Galactic Centre using the ANTARES neutrino Telescope. *Astrophys. J.*, **786** (2014), L5. arXiv:1402.6182, <http://dx.doi.org/10.1088/2041-8205/786/1/L5>.

**10:** Adrián-Martínez, S. *et al.* Searches for clustering in the time integrated skymap of the ANTARES neutrino telescope. *JCAP*, **1405** (2014), 001. arXiv:1402.2809, <http://dx.doi.org/10.1088/1475-7516/2014/05/001>.

- 11:** Adrián-Martínez, S. *et al.* A Search for Time Dependent Neutrino Emission from Microquasars with the ANTARES Telescope. *JHEAp*, **3-4** (2014), 9. arXiv:1402.1600, <http://dx.doi.org/10.1016/j.jheap.2014.06.002>.
- 12:** Adrián-Martínez, S. *et al.* A Search for Neutrino Emission from the Fermi Bubbles with the ANTARES Telescope. *Eur. Phys. J.*, **C74** (2014), 2701. arXiv:1308.5260, <http://dx.doi.org/10.1140/epjc/s10052-013-2701-6>.
- 13:** Adrián-Martínez, S. *et al.* Measurement of the atmospheric  $\nu_\mu$  energy spectrum from 100 GeV to 200 TeV with the ANTARES telescope. *Eur. Phys. J.*, **C73** (2013), 2606. arXiv:1308.1599, <http://dx.doi.org/10.1140/epjc/s10052-013-2606-4>.
- 14:** Aiello, S. *et al.* The optical modules of the phase-2 of the NEMO project. *JINST*, **8** (2013), P07001. [Erratum: *JINST*8,E08001(2013)]. <http://dx.doi.org/10.1088/1748-0221/8/07/P07001>. [<http://dx.doi.org/10.1088/1748-0221/8/08/E08001>].
- 15:** Adrián-Martínez, S. *et al.* Search for muon neutrinos from gamma-ray bursts with the ANTARES neutrino telescope using 2008 to 2011 data. *Astron. Astrophys.*, **559** (2013), A9. arXiv:1307.0304, <http://dx.doi.org/10.1051/0004-6361/201322169>.

#### Conference proceedings.....

- 1:** Perrina, C. Search for cosmic high energy down-going neutrino fluxes from point-like sources with ANTARES. *J. Phys. Conf. Ser.*, **689** (2016), 012013. <http://dx.doi.org/10.1088/1742-6596/689/1/012013>.
- 2:** Perrina, C. *et al.* Contributions to the 34th International Cosmic Ray Conference (ICRC 2015), arXiv:1510.04508v1.
- 3:** Perrina, C. Search for ultra-high energy neutrinos from below and above the horizon with the ANTARES Telescope. *PoS*, **NEUTEL2015** (2015), 078. [http://pos.sissa.it/archive/conferences/244/078/NEUTEL2015\\_078.pdf](http://pos.sissa.it/archive/conferences/244/078/NEUTEL2015_078.pdf).
- 4:** Perrina, C. The ANTARES Neutrino Telescope. In *Topical Research Meeting on Prospects in Neutrino Physics (NuPhys2014)* London, UK, December 15-17, 2014 (2015). arXiv:1505.00224, <https://inspirehep.net/record/1365792/files/arXiv:1505.00224.pdf>.
- 5:** Viola, S. *et al.* Underwater acoustic positioning system for the SMO and KM3NeT - Italia projects. *AIP Conf. Proc.*, **1630** (2014), 134. <http://dx.doi.org/10.1063/1.4902790>.
- 6:** Pellegrino, C. *et al.* The trigger and data acquisition for the NEMO-Phase 2 tower. *AIP Conf. Proc.*, **1630** (2014), 158. <http://dx.doi.org/10.1063/1.4902796>.
- 7:** Pellegriti, M. G. *et al.* Long-term optical background measurements in the Capo Passero deep-sea site. *AIP Conf. Proc.*, **1630** (2014), 94. <http://dx.doi.org/10.1063/1.4902780>.
- 8:** Chiarusi, T. *et al.* Status and first results of the NEMO Phase-2 tower, *JINST* **9** C03045 (2014), <http://dx.doi.org/10.1088/1748-0221/9/03/C03045>.
- 9:** Adrián-Martínez, S. *et al.* Contributions to the 33rd International Cosmic Ray Conference (ICRC 2013), arXiv:1312.4308.

Genève, March 10, 2016