# Agustín Sánchez Losa

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*Curriculum Vitæ*

## Current Professional Situation

*position* Post Doc Researcher
*institute* INFN – Sezione di Bari (Italy)
*group* ANTARES – KM3NeT

## Education

02/10/2015 **PhD in Physics**, *University of Valencia*, co-direction between **IFIC-CPPM**.
"Doctorado en Física con Mención Internacional"
*"Search for High Energy Cosmic Muon Neutrinos from Variable Gamma-Ray Sources and Time Calibration of the Optical Modules of the ANTARES Telescope"*
Supervisors: J. J. Hernández-Rey (IFIC) & D. Dornic (CPPM)
Final mark: **Summa Cum Laude**
Award: **The Global Neutrino Network Dissertation Prize 2016**

26/01/2011 **MSci in Advanced Physics**, *University of Valencia*.
"Máster Universitario en Física Avanzada"
*"Developing an Automate Procedure for the Time Calibration of the ANTARES Neutrino Telescope"*
Supervisor: J. Zúñiga (UV)
Final mark: **8.01/10**

25/09/2009 **BSc in Physics** (5 years degree), *University of Valencia*.
"Licenciado en Física (Plan 2000)"
Final mark: **6.9/10**

## Employment

07/02/2018 - Now | **Postdoc. Res. Ass. (*assegno di ricerca*)**, INFN – Sezione di Bari (Italy)
2-year contract for PhDs awarded by the *Istituto Nazionale di Fisica Nucleare* (Italy).

15/10/2015 - 14/10/2017 | **Postdoc. Fellowship**, INFN – Sezione di Bari (Italy)
2-year grant for foreign PhDs awarded by the *Istituto Nazionale di Fisica Nucleare* (Italy).

01/09/2010 - 31/08/2014 | **PhD Fellowship**, IFIC (Spain)
4-year grant for the PhD realisation awarded by the Spanish Ministry of Science focused in the training of research personnel (FPI BES-2010-033616).

11/05/2010 - 31/08/2010 | **Pre-PhD Contract**, IFIC (Spain)
Temporary contract as superior technician in research provided by CSIC (Spanish national research council).

## Stages in Laboratories

1. **INFN – Sezione di Bari** (*Istituto Nazionale di Fisica Nucleare*), Bari (Italy) ..... (2 years)
The INFN – Sezione di Bari has participated in the early developing phases of the base modules of KM3NeT lines, being one of the KM3NeT integration sites, and is in charge of the KM3NeT detector unit integration coordination and ANTARES time calibration coordination. There, in addition to carry out time dependent analysis for ANTARES and other tasks for both KM3NeT and ANTARES, I participated in various base module integrations and was the Local Quality Supervisor of the Bari integration site, with an ISO-9001 certification for internal quality audits. Contact people: M. Circella / I. Sgura / M. Mongelli.
07/02/2018 – Present *(6 months)* | 15/10/2015 – 10/11/2017 *(2 years)*

2. **CPPM** (*Centre de Physique des Particules de Marseille*), Marseilles (France) ..... (10 months)
The CPPM is the home institute of the ANTARES experiment. Due to its proximity to the ANTARES site most of the operations have base on it. There I took part in various sea operations and designed the analyses of my PhD under the supervision of D. Dornic, the responsible of transient and multi-messenger analyses in ANTARES. Contact people: P. Coyle / V. Bertin / D. Dornic.
19/11/2017 – 20/12/2017 *(4 weeks invited)*
03/06/2013 – 28/10/2013 *(21 weeks)* | 13/01/2013 – 31/01/2013 *(3 weeks)*
23/09/2012 – 27/09/2012 *(1 week)* | 02/03/2012 – 27/06/2012 *(16 weeks)*

3. **Nikhef** (*Nationaal instituut voor subatomaire fysica*), Amsterdam (Netherlands) ..... (2.5 months)
The Nikhef institute has play an important role in the ANTARES point-source analysis among others. There I learnt to use and designed the analysis tools I employed to my work coached by A. Heijboer and C. Bogazzi. Contact people: M. de Jong / A. Heijboer.
04/10/2011 – 15/12/2011 *(10 weeks)*

4. **IFIC** (*Instituto de Física Corpuscular*), Valencia (Spain) ..... (6 years)
The IFIC institute has developed the optical beacon system of ANTARES and is in charge of its time calibration. It also performs point-source and dark matter analyses. Here is where I made my MSci and my PhD. Contact people: J.J. Hernández-Rey / J.D. Zornoza / J. Zúñiga.
November 2009 – October 2015 *(6 years)*

## Research Fields

Neutrino Telescopes • High Energy Experimental Physics
Astro-Particle Physics • Transient Analyses • Multi-Messenger Approaches

My research interests are oriented to the astro-particle physics field in an experimental base.

During my PhD, I was the responsible in keeping, monitoring and coordinating the time calibration of the ANTARES detector. In particular I made the frequent recalibrations *in situ* of the detector time constants by means of the different optical beacons installed on it with an automatized software suite developed by me during my MSci. I also got the chance to participate in sea operations of ANTARES line recovery and study of future emplacements for KM3NeT in the French site by small autonomous lines (MEUST project).

My PhD investigation was focused on the search of cosmic neutrino sources within a multi-messenger approach where the data from ANTARES was analysed in coincidence with the X-ray, gamma-ray and high

energy gamma-ray emission of the candidate transient sources for study. The later was extracted from the analysis of the data from FERMI, SWIFT, ROSSI and MAXI and publications done by MAGIC, HESS and VERITAS and motivated by the correlation expected between the neutrino and the gamma-ray emission in an hadronic scenario. The transient information provided by the gamma-ray emission observed improves the neutrino point-source analysis in a factor 2–3 with respect to a time integrated analysis.

- **On Neutrino Telescope Time Calibration:** Time Calibration is crucial in Neutrino Telescopes in order to achieve the foreseen angular resolution and has a strong impact in DATA quality acquisition.
  - Responsible of the time calibration coordination of the ANTARES neutrino telescope from 2010 to 2015.
  - Responsible of the time calibration by means of beacons of the ANTARES neutrino telescope from 2010 to 2015.
  - Study and establishment of periodicity for the detector time constants monitoring in ANTARES.
  - Re-calibrations *in situ* by means of optical beacons in ANTARES from 2010 to 2015.
  - Developer of an automatized beacon calibration system for ANTARES.
  - Organisation of the Data Base time constant tables for different validity periods for ANTARES.
  - Main subject of my MSci Thesis *"Developing an Automate Procedure for the Time Calibration of the ANTARES Neutrino Telescope"*.
  - Coordination of the muon time calibration and collaboration with the optical beacon time calibration in KM3NeT.
- **On Neutrino Telescope Developing:**
  - Participation in the evaluation of different LED type emission properties in the developing of new beacons for ANTARES and KM3NeT.
  - Participation in the integration of the base modules of two KM3NeT lines: assembling of mechanical, optical fibre and electronic components.
  - Transfer of knowledge on the KM3NeT base module production during one week visit to another integration place (INFN – Sezione di Bologna, Italy) where these modules will be massively produced.
  - Tests on thermal dissipation for future prototypes of KM3NeT base modules.
  - Local Quality Supervisor of the KM3NeT integration site INFN – Sezione di Bari, Internal Auditor ISO-9001 certified.
- **On Neutrino Telescope Operation:**
  - Wide experience in control and data-taking of the ANTARES and KM3NeT detectors: 5 weeks of shifts between ANTARES and KM3NeT and 3 weeks of run coordinator of KM3NeT.
  - Participation in the establishment of the shifter experience and documentation for detector operation for shifters in the early stages of KM3NeT data taking.
  - Developing of tools of the KM3NeT Data Base web for run book keeping and product information visualizations.
  - Participation in various sea operations of ANTARES and KM3NeT-MEUST.
- **On Neutrino Telescope Data Analysis:**
  - Studies of the KM3NeT Data Base run information integrity.
  - Studies and developing of code on the KM3NeT data processing.
  - Developing of some additional functionalities of km3pipe, one of the official software framework of KM3NeT.
  - Analyses of the ANTARES DATA/MC agreement for multiple DATA/MC sets, with special emphasis to satisfy the demands of time-dependent analysis and establish the best water model agreement.
  - On Time dependent search of cosmic neutrino sources in ANTARES in a multi-messenger approach:

- Analyses of Blazars, X-Ray binaries, $\gamma$-Ray Binaries and the Crab Nebula gamma-flares.
- X-ray, gamma-ray and high energy gamma-ray emissions extracted from data and publications of FERMI, SWIFT, ROSSI, MAXI, MAGIC, HESS and VERITAS detectors.
- Developing of a Maximum Likelihood Block method to denoised and characterise the different electromagnetic light curve data.
- Consideration of different possible spectra and a possible lag between the neutrino and the electromagnetic signal.
- Estimation of upper limits in neutrino flux and fluence for different ANTARES data sets.
- Main subject of my PhD Thesis *"Search for High Energy Cosmic Muon Neutrinos from Variable Gamma-Ray Sources and Time Calibration of the Optical Modules of the ANTARES Telescope"*.
- Multiple analysis results presented in 8 contributions in international conferences and two publications:

(†) 1 A. Albert et al. (ANTARES Coll.)
**"Time-dependent search for neutrino emission from x-ray binaries with the ANTARES telescope"**
*JCAP* Vol. 10, p. 019 **(2017)** [doi:10.1088/1475-7516/2017/04/019] [arXiv:1609.07372]

(†) 2 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Search for muon neutrino emission from GeV and TeV gamma-ray flaring blazars using 5 years of the ANTARES Telescope"**
*JCAP* Vol. 12, p. 014 **(2015)** [doi:10.1088/1475-7516/2015/12/014] [arXiv:1506.07354]

- **Other Highlights:**
  - Tutorship of a PhD student in collaboration with University of Strasbourg on time-dependent analyses.
  - Tutorship of a PhD student in collaboration with IFIC on time calibration procedures.
  - Outreach activities in Open Gate events and High School visits.

## Schools & Workshops

1. **Internal Auditor ISO-9001 Seminar**: seminar to obtain the ISO-9001:2015 internal auditor certificate to fulfil KM3NeT Local Quality Supervisor to train KM3NeT Local Quality Supervisors provided by TÜV HELLAS
   NCSR Demokritos, Athens (Greece), 18–20 September 2017

2. **The Universe in light of Planck and BICEP2**: master and doctorate course about cosmology, inflation and experimental observations
   Faculty of Physics, Valencia University, Valencia (Spain), 12–16 May 2014

3. **Advanced C++ Course**: Course of the new standards in C++11 and C++14
   IFIC, Valencia (Spain), 10–16 April 2014

4. **Statistical Analysis Tools for Particle Physics**: TMVA (Toolkit for Multivariate Data Analysis) workshop within the IDPASC School of Flavour Physics
   IFIC, Valencia (Spain), 6–7 May 2013

5. **Workshop on Dark Matter tools and Hands-on Fermi analysis**: FERMI/NASA tools software workshop
   IFIC, Valencia (Spain), 22–26 April 2013

6. **ISAPP Paris 2012** (*International School on Astroparticle Physics*)
   APC, Paris (France), 2–13 July 2012

7. **SeaTray & AntDST Workshop**: ANTARES internal software workshop
   ECAP, Erlangen (Germany), 17–18 September 2011

8. **ISAPP Zaragoza 2010** (*International School on Astroparticle Physics*)
   University of Zaragoza, Zaragoza (Spain), 13–22 July 2010

## Computing Skills

**C / C++98 / C++11 • Python • Perl • Bash / Shell Scripting**
**ROOT • Mathematica • SQL • HTML / HTML5 / CSS • TEX / LATEX**

I have used all those languages extensively for my work. Additionally I have learnt and used the **Fermi Science Tools** software, conceived for the processing of the Fermi satellite data, and also familiarized with the astronomic digital file format **FITS** and its analysing with the SAOImage DS9 and fv FITS Viewer software. For the ANTARES data analysis I have used the **Antares-DAQ** software package and been introduced to the **SeaTray** framework, adapted from the **IceTray** open source, among other internal software tools of ANTARES like **AntDST**. For the KM3NeT data analysis I have used the **Jpp** software package and developed code for the KM3NeT Data Base web interface and the **km3pipe** python software package. Less related with the researching are my working knowledge of Excel/Calc formulas, usage of Powerpoint/Beamer, Illustrator/Inkscape, Photoshop/GIMP, Flash/Action Script and a wide working experience in Unix and Windows systems.

## Language knowledge

| | | |
|---|---|---|
| English | **Professional proficiency** | *Conversationally fluent* |
| Spanish | **Native proficiency** | |
| Italian | **Professional proficiency** | *Conversationally fluent* |
| French | **Elementary proficiency** | *Basic words and phrases mostly* |
| Catalan | **Intermediate proficiency** | *Good understanding but poor speaking* |
| Japanese | **Basic proficiency** | *Some words, reading and phrases only* |

## References


**Marco Circella**
**INFN – Sezione di Bari**
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*ANTARES*
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## Publication List

1 S. Aiello et al. (KM3NeT Coll.)
**"Characterisation of the Hamamatsu photomultipliers for the KM3NeT Neutrino Telescope"**
*JINST* Vol. 13, P05035 **(2018)** [doi:10.1088/1748-0221/13/05/P05035]

2 A. Albert et al. (ANTARES Coll.)
**"All-flavor Search for a Diffuse Flux of Cosmic Neutrinos with Nine Years of ANTARES Data"**
*ApJL* Vol. 853 L7, 5 pp. **(2018)** [doi:10.3847/2041-8213/aaa4f6] [arXiv:1711.07212]

3 A. Albert et al. (ANTARES Coll.)
**"All-sky search for high-energy neutrinos from gravitational wave event GW170104 with the Antares neutrino telescope"**
*EPJ C* Vol. 77:911 **(2017)** [doi:10.1140/epjc/s10052-017-5451-z] [arXiv:1710.03020]

4 S. Bhandari et al. (including ANTARES Coll.)
**"The SUrvey for Pulsars and Extragalactic Radio Bursts – II. New FRB discoveries and their follow-up"**
*MNRAS* Vol. 475, pp. 1427–1446 **(2017)** [doi:10.1093/mnras/stx3074] [arXiv:1711.08110]

5 A. Albert et al. (including ANTARES Coll.)
**"Search for High-energy Neutrinos from Binary Neutron Star Merger GW170817 with ANTARES, IceCube, and the Pierre Auger Observatory"**
*ApJL* Vol. 850 L35, 18 pp. **(2017)** [doi:10.3847/2041-8213/aa9aed] [arXiv:1710.05839]

6 B. P. Abbott et al. (including the ANTARES Coll.)
**"Multi-messenger Observations of a Binary Neutron Star Merger"**
*ApJL* Vol. 848 L12, 59 pp. **(2017)** [doi:10.3847/2041-8213/aa91c9] [arXiv:1710.05833]

7 A. Albert et al. (ANTARES Coll.)
**"First all-flavor neutrino pointlike source search with the ANTARES neutrino telescope"**
*PRD* Vol. 96, 082001 **(2017)** [doi:10.1103/PhysRevD.96.082001] [arXiv:1706.01857]

8 A. Albert et al. (ANTARES Coll.)
**"New Constraints on all flavour Galactic diffuse neutrino emission with the ANTARES telescope"**
*PRD* Vol. 96, 062001 **(2017)** [doi:10.1103/PhysRevD.96.062001] [arXiv:1705.00497]

9 A. Albert et al. (ANTARES Coll.)
**"Search for relativistic magnetic monopoles with five years of the ANTARES detector data"**
*JHEP* Vol. 07, n. 054 **(2017)** [doi:10.1007/JHEP07(2017)054] [arXiv:1703.00424]

10 A. Albert et al. (ANTARES Coll.)
**"An algorithm for the reconstruction of high-energy neutrino-induced particle showers and its application to the ANTARES neutrino telescope"**
*EPJ C* Vol. 77:419 **(2017)** [doi:10.1140/epjc/s10052-017-4979-2] [arXiv:1703.02432]

11 A. Albert et al. (Antares Coll., IceCube Coll., LIGO Scientific Coll. and Virgo Coll.)
**"Search for High-energy Neutrinos from Gravitational Wave Event GW151226 and Candidate LVT151012 with ANTARES and IceCube"**
*PRD* Vol. 96, 022005 **(2017)** [doi:10.1103/PhysRevD.96.022005] [arXiv:1703.06298]

12 E. Petroff et al. (HESS Coll. and ANTARES Coll.)
**"A polarized fast radio burst at low Galactic latitude"**
*MNRAS* Vol. 469, pp. 4465–4482 **(2017)** [doi:10.1093/mnras/stx1098] [arXiv:1705.02911]

13 S. Adrián-Martínez et al. (KM3NeT Coll.)
**"Intrinsic limits on resolutions in muon- and electron-neutrino charged-current events in the KM3NeT/ORCA detector"**
*JHEP* Vol. 05, n. 008 **(2017)** [doi:10.1007/JHEP05(2017)008] [arXiv:1612.05621]

14 A. Albert et al. (ANTARES Coll.)
**"Search for Dark Matter Annihilation in the Earth using the ANTARES Neutrino Telescope"**
*PhysDarkUniverse* Vol. 16, pp. 41–48 **(2017)** [doi:10.1016/j.dark.2017.04.005] [arXiv:1612.06792]

(†) 15 A. Albert et al. (ANTARES Coll.)
**"Time-dependent search for neutrino emission from x-ray binaries with the ANTARES telescope"**
*JCAP* Vol. 10, p. 019 **(2017)** [doi:10.1088/1475-7516/2017/04/019] [arXiv:1609.07372]

16 A. Albert et al. (ANTARES Coll.)
**"Search for high-energy neutrinos from bright GRBs with ANTARES"**
*MNRAS* Vol. 469, pp. 906–915 **(2017)** [doi:10.1093/mnras/stx902] [arXiv:1612.08589]

17 A. Albert et al. (ANTARES Coll.)
**"Results from the search for dark matter in the Milky Way with 9 years of data of the ANTARES neutrino telescope"**
*PhL B* Vol. 769, p. 249 **(2017)** [doi:10.1016/j.physletb.2017.03.063] [arXiv:1612.04595]

18 M. André et al. (ANTARES Coll.)
**"Sperm whale long-range echolocation sounds revealed by ANTARES, a deep-sea neutrino telescope"**
*SciRep* Vol .7, 45517 **(2017)** [doi:10.1038/srep45517]

19 X. Durrieu de Madron et al. (ANTARES Coll.)
**"Deep sediment resuspension and thick nepheloid layer generation by open-ocean convection"**
*JGeophysResOceans* Vol. 122, Issue 3, pp. 2291–2318 **(2017)** [doi:10.1002/2016JC012062]

20 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Stacked search for time shifted high energy neutrinos from gamma ray bursts with the ANTARES neutrino telescope"**
*EPJ C* Vol. 77:20 **(2017)** [doi:10.1140/epjc/s10052-016-4496-8] [arXiv:1608.08840]

21 S. Adrián-Martínez et al. (KM3NeT Coll.)
**"A method to stabilise the performance of negatively fed KM3NeT photomultipliers"**
*JINST* Vol. 11, P12014 **(2016)** [doi:10.1088/1748-0221/11/12/P12014]

22 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Constraints on the neutrino emission from the Galactic Ridge with the ANTARES telescope"**
*PhL B* Vol. 760, p. 143 **(2016)** [doi:10.1016/j.physletb.2016.06.051] [arXiv:1602.03036]

23 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Limits on Dark Matter Annihilation in the Sun using the ANTARES Neutrino Telescope"**
*PhL B* Vol. 759, pp. 69–74 **(2016)** [doi:10.1016/j.physletb.2016.05.019] [arXiv:1603.02228]

24 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Results of the search for Secluded Dark Matter in the Sun with the ANTARES neutrino telescope"**
*JCAP* Vol. 05, p. 016 **(2016)** [doi:10.1088/1475-7516/2016/05/016] [arXiv:1602.07000]

25 S. Adrián-Martínez et al. (Antares Coll., IceCube Coll., LIGO Scientific Coll. and Virgo Coll.)
**"High-energy Neutrino follow-up search of Gravitational Wave Candidate GW150914"**
*PRD* Vol. 93, 122010 **(2016)** [doi:10.1103/PhysRevD.93.122010] [arXiv:1602.05411]

26 S. Adrián-Martínez et al. (KM3NeT Coll.)
**"Letter of intent for KM3NeT 2.0"**
*JPhys G* Vol. 43, 084001 **(2016)** [doi:10.1088/0954-3899/43/8/084001] [arXiv:1601.07459]

27 S. Adrián-Martínez et al. (ANTARES Coll. and IceCube Coll.)
**"First combined search for neutrino point-sources in the Southern Hemisphere with the ANTARES and IceCube neutrino telescopes"**
*ApJ* Vol. 823, p. 65 **(2016)** [doi:10.3847/0004-637X/823/1/65] [arXiv:1511.02149]

28 S. Croft et al. (MWA Coll. and ANTARES Coll.)
**"Murchison Widefield Array Limits on Radio Emission from ANTARES Neutrino Events"**
*ApJ* Vol. 829 n. 2, p. L24 **(2016)** [doi:10.3847/2041-8205/820/2/L24] [arXiv:1603.02271]

29 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Time calibration with atmospheric muon tracks in ANTARES"**
*APh* Vol. 78, pp. 43–51 **(2016)** [doi:10.1016/j.astropartphys.2016.02.001] [arXiv:1507.04182]

30 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Optical and X-ray early follow-up of ANTARES neutrino alerts"**
*JCAP* Vol. 02, p. 062 **(2016)** [doi:10.1088/1475-7516/2016/02/062] [arXiv:1508.01180]

(†) 31 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Search for muon neutrino emission from GeV and TeV gamma-ray flaring blazars using 5 years of the ANTARES Telescope"**
*JCAP* Vol. 12, p. 014 **(2015)** [doi:10.1088/1475-7516/2015/12/014] [arXiv:1506.07354]

32 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Search of Dark Matter Annihilation in the Galactic Centre using the ANTARES Neutrino Telescope"**
*JCAP* Vol. 10, p. 068 **(2015)** [doi:10.1088/1475-7516/2015/10/068] [arXiv:1505.04866]

33 S. Adrián-Martínez et al. (ANTARES Coll.)
**"ANTARES Constrains a Blazar Origin of Two IceCube PeV Neutrino Events"**
*A&A* Vol. 576, L8 **(2015)** [doi:10.1051/0004-6361/201525670] [arXiv:1501.07843]

34 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Constraining the neutrino emission of gravitationally lensed Flat-Spectrum Radio Quasars with ANTARES data"**
*JCAP* Vol. 11, p. 017 **(2014)** [doi:10.1088/1475-7516/2014/11/017] [arXiv:1407.8525]

35 S. Adrián-Martínez et al. (ANTARES Coll.)
**"A search for time dependent neutrino emission from microquasars with the ANTARES telescope"**
*JHEAp* Vol. 3–4, pp. 9–17 **(2014)** [doi:10.1016/j.jheap.2014.06.002] [arXiv:1402.1600]

36 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Searches for clustering in the time integrated skymap of the ANTARES neutrino telescope"**
*JCAP* Vol. 05, p. 001 **(2014)** [doi:10.1088/1475-7516/2014/05/001] [arXiv:1402.2809]

37 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Searches for Point-like and Extended Neutrino Sources Close to the Galactic Center Using the ANTARES Neutrino Telescope"**
*ApJL* Vol. 786 L5, pp. L14–L19 **(2014)** [doi:10.1088/2041-8205/786/1/L5] [arXiv:1402.6182]

38 Hans van Haren and The ANTARES Coll.
**"High-frequency internal wave motions at the ANTARES site in the deep Western Mediterranean"**
*OCEAN DYNAM* Vol. 64, Issue 4, pp. 507–517 **(2014)** [doi:10.1007/s10236-014-0702-0]

39 S. Adrián-Martínez et al. (ANTARES Coll.)
**"A Search for Neutrino Emission from the Fermi Bubbles with the ANTARES Telescope"**
*EPJ C* Vol. 74:2701 **(2014)** [doi:10.1016/j.nima.2013.11.096] [arXiv:1308.5260]

40 S. Adrián-Martínez et al. (ANTARES Coll.)
**"First results on dark matter annihilation in the Sun using the ANTARES neutrino telescope"**
*JCAP* Vol. 11, p. 032 **(2013)** [doi:10.1088/1475-7516/2013/11/032] [arXiv:1302.6516]

41 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Measurement of the atmospheric $\nu_\mu$ energy spectrum from 100 GeV to 200 TeV with the ANTARES telescope"**
*EPJ C* Vol. 73:2606 **(2013)** [doi:10.1140/epjc/s10052-013-2606-4] [arXiv:1308.1599]

42 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Search for muon neutrinos from gamma-ray bursts with the ANTARES neutrino telescope using 2008 to 2011 data"**
*A&A* Vol. 559, A9 **(2013)** [doi:10.1051/0004-6361/201322169] [arXiv:1307.0304]

43 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Search for a Correlation between ANTARES Neutrinos and Pierre Auger Observatory UHECRs Arrival Directions"**
*ApJ* Vol. 774:19 **(2013)** [doi:10.1088/0004-637X/774/1/19] [arXiv:1202.6661]

44 C. Tamburini et al. (ANTARES Coll.)
**"Deep-Sea Bioluminescence Blooms after Dense Water Formation at the Ocean Surface"**
*PLOS ONE* Vol. 8, e67523 **(2013)** [doi:10.1371/journal.pone.0067523]

45 S. Adrián-Martínez et al. (ANTARES Coll.)
**"A first search for coincident gravitational waves and high energy neutrinos using LIGO, Virgo and ANTARES data from 2007"**
*JCAP* Vol. 06, p. 008 **(2013)** [doi:10.1088/1475-7516/2013/06/008] [arXiv:1205.3018]

46 S. Adrián-Martínez et al. (ANTARES Coll.)
**"First search for neutrinos in correlation with gamma-ray bursts with the ANTARES neutrino telescope"**
*JCAP* Vol. 1303, 006 **(2013)** [doi:10.1088/1475-7516/2013/03/006] [arXiv:1302.6750]

47 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Search for cosmic neutrino point sources with four year data of the ANTARES telescope"**
*ApJ* Vol. 760:53 **(2012)** [doi:10.1088/0004-637X/760/1/53] [arXiv:1207.3105]

48 S. Adrián-Martínez et al. (ANTARES Coll.)
**"The positioning system of the ANTARES neutrino telescope"**
*JINST* Vol. 7, T08002 **(2012)** [doi:10.1088/1748-0221/7/08/T08002] [arXiv:1202.3894]

49 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Search for neutrino emission from gamma-ray flaring blazars with the ANTARES telescope"**
*APh* Vol. 36, Issue 1, pp. 204–210 **(2012)** [doi:10.1016/j.astropartphys.2012.06.001] [arXiv:1111.3473]

50 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Measurement of atmospheric neutrino oscillations with the ANTARES neutrino telescope"**
*PhL B* Vol. 714, Issues 2-5, pp. 224–230 **(2012)** [doi:10.1016/j.physletb.2012.07.002] [arXiv:1206.0645]

51 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Search for Relativistic Magnetic Monopoles with the ANTARES Neutrino Telescope"**
*APh* Vol. 35, pp. 634–640 **(2012)** [doi:10.1016/j.astropartphys.2012.02.007] [arXiv:1110.2656]

52 S. Adrián-Martínez et al. (ANTARES Coll.)
**"Measurement of the Group Velocity of Light in Sea Water at the ANTARES Site"**
*APh* Vol. 35, pp. 552–557 **(2012)** [doi:10.1016/j.astropartphys.2011.12.003] [arXiv:1110.5184]

53 M. Ageron et al. (ANTARES Coll.)
**"The ANTARES Telescope Neutrino Alert System"**
*APh* Vol. 35, pp. 530–536 **(2012)** [doi:10.1016/j.astropartphys.2011.11.011] [arXiv:1103.4477]

54 J. A. Aguilar et al. (ANTARES Coll.)
**"A method for detection of muon induced electromagnetic showers with the ANTARES detector"**
*NIM A* Vol. 675, pp. 56–52 **(2012)** [doi:10.1016/j.nima.2012.01.060] [arXiv:1106.0426]

55 S. Adrián-Martínez et al. (ANTARES Coll.)
**"First search for point sources of high energy cosmic neutrinos with the ANTARES neutrino telescope"**
*ApJL* Vol. 743, pp. L14–L19 **(2011)** [doi:10.1088/2041-8205/743/1/L14] [arXiv:1108.0292]

(†) 56 Carlos J. Zapata-Rodríguez and Agustín Sánchez-Losa
**"Three-dimensional field distribution in the focal region of low-Fresnel-number axicons"**
*JOSA A* Vol. 23, Issue 12, pp. 3016–3026 **(2006)** [doi:10.1364/JOSAA.23.003016]

## Conference Contributions

1. **ICRC 2017** | Busan (South Korea), 12–20 July 2017

   **Talk:** "Time-dependent search of neutrino emission from X-ray and gamma-ray binaries with the ANTARES telescope"
   *PoS* (ICRC2017) 971

   **Poster:** "Time-dependent search of neutrino emission from bright gamma-ray flaring blazars with the ANTARES telescope"
   *PoS* (ICRC2017) 970

2. **RICAP-16** | Frascati (Italy), 21–24 June 2016

   **Talk:** "Results from the ANTARES Neutrino Telescope"
   *EPJ Web Conf* 136, 04002 (2017) [doi:10.1051/epjconf/201713604002]

3. **ICRC 2015** | The Hague (Netherlands), 30 July – 6 August 2015

   **Talk:** "Time-dependent search of neutrino emission from X-ray binaries with the ANTARES telescopes"
   *PoS* (ICRC2015) 1046

   **Poster:** "Time-dependent search of high energy cosmic neutrinos from variable Blazars with the ANTARES telescope"
   *PoS* (ICRC2015) 1075

4. **APP (TeVPA/IDM) 2014** | Amsterdam (Netherlands), 23–28 June 2014

   **Talk:** "Search of a neutrino signal with the ANTARES telescope based on multi-messenger analyses"
   *(Contribution #263 of the Astroparticle Physics 2014)*

5. **Bienal 2013** | Valencia (Spain), 15–19 July 2013

   **Talk:** "Search for neutrino emission in gamma-ray flaring blazars with the ANTARES telescope"
   *Published in* [ISBN:978-84-616-5607-3] contribution #326 (2013)

6. **ICRC 2013** | Rio de Janeiro (Brazil), 2–9 July 2013

   **Poster:** "Search for neutrino emission of gamma-ray flaring blazars with the ANTARES telescope"
   *BrazJPhys* 44 no.5, pp.415-608, #0296 (2014) [ISBN:978-85-89064-29-3] [arXiv:1312.4308]

7. **RICAP-13** | Roma (Italy), 22–24 May 2013

   **Talk:** "Transient Point Source Analyses in the ANTARES Neutrino Telescope"
   *NIM A* Vol. 742, pp. 195–198 (2014) [doi:10.1016/j.nima.2013.11.096] [arXiv:1311.7596]

8. **ISAPP Paris-2012** | Paris (France), 18–22 September 2012

   **Poster:** "Using gamma-flares for cosmic neutrino analysis in ANTARES"
   *(Contribution #27 of Posters of the ISAPP Paris-2012)*

9. **VLVnT11** | Erlangen (Germany), 12–14 October 2011

   **Talk:** "Search for neutrino emission in gamma-ray flaring blazars with the ANTARES telescope"
   *NIM A* Vol. 725, pp. 60–63 (2013) [doi:10.1016/j.nima.2012.11.163] [arXiv:1204.1447]

10. **RNO8** | Alicante (Spain), 18–22 September 2006

    **Poster:** "Reducción focal en microestructuras de perfil cónico"
    *Libro de Actas,* Dep. Legal: B-42325-2006, VP-65

## Collaboration Meeting Attendances & Contributions

1. **Granada 2018** (ANTARES & KM3NeT) | Granada (Spain), 7–11 May 2018 *(not present)*
   **Talk:** "Last news on muon time calibration"

2. **Rabat 2018** (ANTARES & KM3NeT) | Rabat (Morocco), 5–9 February 2018 *(not present)*
   **Talk:** "Inter-DOM time calibration with atmospheric muons"

3. **CSG Valencia 2017** (KM3NeT Bootcamp) | Valencia (Spain), 14–17 November 2017

4. **MANTS 2017** (MANTS Workshop) | Marseilles (France), 7–8 October 2017

5. **Marseilles 2017** (ANTARES & KM3NeT) | Marseilles (France), 2–6 October 2017
   **Talk:** "Update of time dependent analysis of XRB/$\gamma$RB+Blazars"

6. **Bari 2017** (ANTARES & KM3NeT) | Bari (Italy), 12–16 June 2017
   **Talk:** "Update of the time-dependent analyses: GRB, XRB, Blazars"

7. **Athens 2017** (ANTARES & KM3NeT) | Athens (Greece), 13–17 February 2017
   **Talk:** "Update of the time-dependent analyses: GRB, XRB, Blazars"

8. **QA/QC Bari 2017** (KM3NeT Quality Assurance and Quality Control) | Bari (Italy), 25 January 2017
   **Talk:** "Quality forms (filling, handling and follow up)"

9. **Strasbourg 2016** (ANTARES & KM3NeT) | Strasbourg (France), 26–30 September 2016
   **Talk:** "ANTARES DATA/MC studies: Comparison between different water models"

10. **Noto 2016** (ANTARES & KM3NeT) | Noto (Italy), 13–17 June 2016
    **Talk:** "Update on XRB/GRB binaries"

11. **Erlangen 2016** (ANTARES & KM3NeT) | Erlangen (Germany), 22–26 February 2016

12. **KM3-It Catania 2016** (KM3 Italy) | Catania (Italy), 26–27 January 2016

13. **CSG Athens 2015** (KM3NeT Computing and Software Group) | Athens (Greece), 3–4 December 2015

14. **Valencia 2015** (ANTARES & KM3NeT) | Valencia (Spain), 23–27 February 2015

15. **Leiden 2014** (ANTARES & KM3NeT) | Leiden (Netherlands), 19–23 May 2014 [*not assited*]
    **Cont.:** "Update of the Fermi Blazar time dependent analysis"

16. **Vilanova 2014** (ANTARES & KM3NeT) | Vilanova i la Geltrú (Spain), 17–21 February 2014
    **Talk:** "Update of Time-Dependent Analysis (Blazars & All-sky/All-time)"
    **Cont.:** "X-ray binaries Time-dependent search"

17. **MANTS 2013** (MANTS Workshop) | Garching (Germany), 14–15 October 2013

18. **Würzburg 2013** (ANTARES & KM3NeT) | Würzburg (Germany), 9–13 October 2013
    **Talk:** "Time dependent analysis of Fermi and IACT blazar flares"
    **Cont.:** "Search of neutrino around flares of the Crab Nebula"

19. **Marseilles 2013** (ANTARES) | Marseilles (France), 4–7 June 2013
    **Talk:** "Time dependent analysis of Fermi and IACT blazar flares"

20. **Oujda 2013** (ANTARES) | Oujda (Morocco), 19–22 February 2013
    **Talk:** "Time-dependent Flare Analysis"

21. **MANTS 2012** (MANTS Workshop) | Bologna (Italy), 6–7 October 2012

22. **Bologna 2012** (ANTARES & KM3NeT) | Bologna (Italy), 1–4 & 5 October 2012
    **Talk:** "Update of the AGN flare's analysis"

23. **Roma 2012** (ANTARES) | Roma (Italy), 7–10 May 2012
    **Talk:** "Analysis of the FERMI/SWIFT Blazar flares"
    **Talk:** "Update on time calibration with optical beacons"

24. **CERN 2012** (ANTARES) | Geneva (Switzerland), 6–9 February 2012
    **Talk:** "Study on the improvement from beta information in the Likelihood"
    **Talk:** "Update on time calibration with optical beacons"

25. **MANTS 2011** (MANTS Workshop) | Uppsala (Sweden), 24–25 September 2011

26. **Bamberg 2011** (ANTARES) | Bamberg (Germany), 19–22 September 2011

27. **Moscow 2011** (ANTARES) | Moscow (Russia), 6–10 June 2011
    **Talk:** "Maximum likelihood block method for denoising gamma-ray light curve"
    **Talk:** "News on time calibration"

28. **CERN 2011** (ANTARES) | Geneva (Switzerland), 7–10 February 2011
    **Talk:** "News on time calibration"

29. **Amsterdam 2010** (ANTARES) | Amsterdam (Netherlands), 22–27 November 2010
    **Talk:** "News on time calibration"

30. **MANTS 2010** (MANTS Workshop) | Paris (France), 24–25 September 2010

31. **Paris 2010** (ANTARES) | Paris (France), 20–24 September 2010

32. **2nd MultiDark Consolider Workshop** (Multidark) | Santander (Spain), 28–30 June 2010

33. **Gandía 2009** (ANTARES) | Gandía (Spain), 23–27 November 2009

## Other Achievements

- **3 ANTARES shifts** of 1 week each performed: 19–25 May 2011, 9–15 January 2014 and 29 May – 4 June 2014.
- **2 KM3NeT shifts** of 1 week each performed: 10–16 February 2016 and 17–23 February 2016.
- **3 weeks of KM3NeT run coordinator**: 24 February – 1 March 2016, 2–8 March 2016 and 9–15 March 2016.

## Public Outreach

- Guided visits to the ANTARES laboratory at IFIC (**2014–2015**).
- IFIC's open day 30$^{th}$ May, 2015 (**Expociencia 2015**).
- IFIC's open day 24$^{th}$ May, 2014 (**Expociencia 2014**).
- IFIC's open day 25$^{th}$ May, 2013 (**Expociencia 2013**).
- Nikhef's open day 8$^{th}$ October, 2011 (**Open Dag Science Park 2011**).