

Part A. PERSONAL INFORMATION

CV date

20/03/2020

First and Family name	Sergio Navas Concha		
ID number		Age	
Researcher codes	WoS Researcher ID	N-4649-2014	
	SCOPUS Author ID	8791928400	
	ORCID	0000-0003-1688-5758	

A.1. Current position

Name of University	University of Granada		
Department	Física Teórica y del Cosmos		
Address and Country	Facultad de Ciencias (Edificio Mecenas) Av. Severo Ochoa s/n. E-18071 Granada (España)		
Phone number	+34 958 244152	E-mail	navas@ugr.es
Current position	Full Professor	From	13/12/2018
Key words	Astroparticle Physics, Neutrino Telescopes		

A.2. Education

PhD	University	Year
Degree in Physics	University of Valencia	1993
Doctor in Physics	University of Valencia	1997

A.3. JCR articles, h Index, thesis supervised...

Full Research Period (Source: Web of Science):

JCR publications: 287. Total Times Cited: 54000 (185 citations per article)

Number of articles with >100 citations: 37

h-Index: 56

Last 5 years (2015 – 2019): JCR publications: 47 (42 in Q1). Total Times Cited: 8000

Inspire Database:

Number of citable documents: 309. Number of citations: 85700.

h-Index: 82

Number of 6-year research periods ("Sexenios CNEAI"): 4. Last evaluated: 2011 – 2016

3 PhD Theses supervised. 2 PhD Theses ongoing, currently under supervision

5 "Master Projects" supervised

Number of

Part B. CV SUMMARY (max. 3500 characters, including spaces)

My scientific career has developed in the fields of experimental high-energy particle physics, under-sea neutrino telescopes, LAr TPCs for neutrino and dark matter detection and cosmic rays. I made contributions to data analyses and laboratory hardware measurements, especially on SiPMs and PMTs characterization.

1994 – 1997: Pre-doctoral fellow at IFIC (Valencia). PhD Thesis on searches for SUSY particles at the DELPHI detector at LEP2 energies. The results conducted to stringent limits on the MSSM parameter space (Eur.Phys.J. C1 (1998) 1).

Since 1998: Member of the "Particle Data Group" charged with summarizing, compiling and revising Particle Physics. Responsibilities on the "unstable mesons" and "Monte Carlo" sections of the Review of Particle Physics publication (Phys.Rev. D98 (2018) 030001).

1998 – 2000: Postdoctoral fellow at CPPM (France). As member of ANTARES I contributed to the development of the resources (hardware and software) needed to perform the time calibration of the detector, as well as the in-situ measurement of the seawater optical



properties using laser beacons (Astropart.Phys. 13 (2000) 127). Participation in sea campaigns to validate the on-board operation procedures (deployment, positioning...).

2000 – 2007: Postdoctoral contract at ETH Zürich, followed by a “Ramon y Cajal” contract at the Granada University. I worked on the analysis of the ICARUS T600 data, focusing on the development of new techniques to measure the μ momentum, particle identification and the measurement of the Liquid Argon purity (NIM A516 (2004) 68). I contributed to published studies on long-baseline ν experiments and ν factories (Nucl.Phys. B631 (2002) 239-284), ν properties (Phys.Rev. D74 (2006) 033010) and nucleon decay searches with LAr detectors (JHEP 0704 (2007) 041). The expertise on LAr TPCs was then applied to the direct detection of dark matter WIMPs (JCAP 0501 (2005) 001). I contributed to the design and calibration of the slow-control devices (pressure, liquid level, purity and temperature). Expertise on the characterization of the PMTs operated at cryogenic temperatures (JINST 3 (2008) P01006).

2007 – 2015: Detection of ultra-high energy neutrinos with the Pierre Auger Observatory, being co-convener of the “Neutrino physics task”. The analyses I carried out increased the sensitivity of the Observatory to the ν detection by extending the field of view and by optimizing the selection criteria (Phys.Rev. D91 (2015), 092008). Moreover, the first limits on point-like neutrino sources were calculated (Astrophys.J. 755 (2012) L4). Associated Professor at UGR in 2009.

2016 – present: Member of ANTARES and KM3NeT telescopes (J.Phys.G43 (2016) 084001). Contributions to the measurement of the diffuse flux of cosmic neutrinos with ANTARES (Astrophys.J 853 (2018) L7) using, for the first time, the *shower* channel. Currently working on improving the potentiality of KM3NeT to measure the neutrino mass ordering (ORCA), on the search for point sources of cosmic neutrinos (ARCA) and on the indirect searches for dark matter. Concerning hardware related activities, I contribute to the characterization and validation of the data transfer and time synchronization systems of the KM3NeT distributed network. I am Chair of the ANTARES “Publications Committee” and member of the “Conference Committee” of both Collaborations.

Part C. RELEVANT MERITS

C.1. Publications (including books). Authors are listed in alphabetic order in all papers.

1. “[Review of Particle Physics](#)” [Particle Data Group, ~160 authors]. Author of 10 editions *from*: D.E. Groom *et al.*, Eur. Phys. J. C 15 (2000) 1 – 878 *to*: M. Tanabashi *et al.*, Phys. Rev. D 98 (2018) 030001 (DOI: 10.1103/PhysRevD.98.030001)
2. “[Dependence of atmospheric muon flux on seawater depth measured with the first KM3NeT detection units](#)”, M. Ageron *et al.* [KM3NeT Collab., 246 authors], Eur.Phys.J. C80 (2020) no.2, 99, 15 p. (DOI: 10.1140/epjc/s10052-020-7629-z)
3. “Sensitivity of the KM3NeT/ARCA neutrino telescope to point-like neutrino sources”, A. Albert *et al.* [ANTARES Collab., 127 authors], Astropart.Phys. 111 (2019) 100-110, 11 p. (DOI: 10.106/j.astropartphys.2019.04.002)
4. “[All-flavor Search for a Diffuse Flux of Cosmic Neutrinos with Nine Years of ANTARES Data](#)”, A. Albert *et al.* [ANTARES Collab., 127 authors], Astrophys. J Letters 853 (2018) no.1, L7, 5p. (DOI: 10.3847/2041-8213/aaa4f6)
5. “[First all-flavor neutrino pointlike source search with the ANTARES neutrino telescope](#)”, A. Albert *et al.* [ANTARES Collab., 128 authors], Phys. Rev. D96 (2017) no.8, 082001, 15p. (DOI: 10.1103/PhysRevD.96.082001)
6. “[Letter of intent for KM3NeT 2.0](#)”, S. Adrian-Martinez *et al.* [KM3NeT Collab., 246 authors], J. Phys. G43 (2016) no.8, 084001, 130 p. (DOI: 10.1088/0954-3899/43/8/084001)



7. “Improved limit to the diffuse flux of ultrahigh energy neutrinos from the Pierre Auger Observatory”, A. Aab *et al.* [Pierre Auger Collab., 464 authors], Phys. Rev. D 91 (2015) 092008, 16p. (DOI: 10.1103/PhysRevD.91.092008)
8. “Search for point-like sources of ultra-high energy neutrinos at the Pierre Auger Observatory and improved limit on the diffuse flux of tau neutrinos”, P. Abreu *et al.* [Pierre Auger Collab., 510 authors], Astrophys. J. Letters 755 (2012) L4, 7p. (DOI: 10.1088/2041-8205/755/1/L4)
9. “The ANTARES optical module”, P. Amram *et al.*, [ANTARES Collab., 154 authors], NIM A484 (2002) 369, 14p. (DOI: 10.1016/S0168-9002(01)02026-5)
10. “Search for charginos, neutralinos and gravitinos at LEP”, P. Abreu *et al.*, [DELPHI Collab., 545 authors], Eur. Phys. J. C1 (1998) 1–20, 25p. (DOI: 10.1007/s100520050058)

C.2. Research projects and grants

Reference: PGC2018-096663-B-C44

Ministerio de Ciencia, Innovación y Universidades (Spain)

Title: “Física Fundamental y Astronomía Multi-Mensajero con Telescopios de Neutrinos”

Principal Investigator: S. Navas (UGR)

Period: 01/2019 – 12/2021

Reference: EQC2018-005214-P

Ministerio de Ciencia, Innovación y Universidades (Spain)

Title: “Laboratorio de distribución de tiempo y frecuencia: LABTIF”

Principal Investigator: A.J. Díaz (UGR). Type of participation: researcher.

Period: 01/2019 – 12/2020

Reference: CA18108, COST Action – European Cooperation in Science and Technology

Title: “Quantum Gravity Phenomenology in the Multi-messenger Approach”

Principal Investigator: J.M. Carmona (U. Zaragoza). Type of participation: researcher.

Period: 03/2019 – 03/2023

Reference: A-FQM-053-UGR18, Programa Operativo FEDER Junta de Andalucía

Title: “Revelando la Materia Oscura con Neutrinos Usando Telescopios Submarinos”

Principal Investigator: S. Navas (UGR)

Period: 01/2020 – 12/2021

Reference: FPA2015-06150-C3-3-P , Ministerio de Economía y Competitividad (Spain)

Title: “Participación de la UGR en ANTARES, KM3NET-ARCA/ORCA y PDG”

Principal Investigator: S. Navas (UGR)

Period: 01/2016 – 12/2018

Reference: FPA2012-39489-C04-4 , Ministerio de Ciencia e Innovación (Spain)

Title: “Participación de la UGR en el Observatorio Pierre Auger”

Principal Investigator: A. Bueno (UGR). Type of participation: researcher.

Period: 01/2013 – 12/2015

Reference: FPA2009-07187 , Ministerio de Ciencia Innovación (Spain)

Title: “Física experimental de rayos cósmicos e I+D para física subterránea en Canfranc”

Principal Investigator: A. Bueno (UGR). Type of participation: researcher.

Period: 1/2010 – 12/2012

Reference: CSD-2007-00042 , Ministerio de Ciencia y Tecnología (Spain)

Title: “Centro Nacional de Física de Partículas, Astropartículas y Nuclear CPAN”

Principal Investigator: A. Pich (U. Valencia). Type of participation: researcher.

Period: 01/2008 – 06/2015



References: FPA2007-29104-E, FPA2009-07264-E , Ministerio de Educación y Ciencia
Title: “Elaboración del Compendio de Física de Partículas”
Principal Investigator: S. Navas (UGR)
Period: 4/2008 – 04/2009 and 3/2010 – 05/2012

Reference: FPA2005-07605-C02-01, Ministerio de Ciencia Tecnología (Spain)
Title: “Detectores de Argón Líquido para el estudio de Física más allá del Modelo Estándar”
Principal Investigator: S. Navas (UGR)
Period: 12/2005 – 07/2007

C.3. Contracts

C.4. Patents

C.5. Fellows and Contracts:

- “Catedrático de Universidad” (Full Professor) at University of Granada (since 12/2018).
- “Profesor Titular de Universidad” at the University of Granada (2009 – 2018).
- “Profesor Contratado Doctor” at the University of Granada (2007 – 2009).
- “Ramón y Cajal” Contract at the University of Granada (2002 – 2006).
- Postdoctoral Contract at ETH Zürich, Switzerland (2000 – 2002).
- Postdoctoral Fellow (MEC) at CPPM, France (1998 – 2000).
- Predoctoral Fellow (MEC) at IFIC, Valencia (1995 – 1998).

C.6. Direction of works and teaching experience:

- Supervisor of 3 PhD Theses:
“Search for Ultra-High energy neutrinos at the Pierre Auger Observatory”, J.L. Navarro (2012); “Muon Arrival Time Distributions: An Application To The Pierre Auger Observatory”, D. García (2010); “Liquid Argon Detectors For Rare Event Searches”, A. Melgarejo (2008)..
- Supervisor of 5 Master Projects in the last 5 years (topics: ANTARES and KM3NeT).
- 22 years of teaching experience at University level in:
 - Master in Physics: Radiations, Nanotechnology, Particles and Astrophysics
 - Degree in Physics, Mathematics, Biology, Civil Engineering.

C.7. Membership of International Collaborations:

- (Present) Member of the international Collaboration “Particle Data Group” charged with preparing the “Review of Particle Physics”, since 1998.
- (Present) Affiliated member of the ANTARES and KM3NeT Collaborations. Chair of the “Publications Committee” and member of the “Conferences Committees”.
- Former Affiliated member of the Pierre Auger, ICARUS and DELPHI Collaborations.
- Former co-convener of the “Neutrino Physics” task (Pierre Auger).
- Former member of the “Timing Calibration” and “Detector Positioning” tasks (ANTARES).
- Former DELPHI representative in the “LEP2 SUSY Working Group” in charge of combining the LEP results on SUSY searches.
- >50 scientific/technical documents published internally in International Collaborations.

C.8. Others:

- Vice-dean for Research and Scientific Outreach, Faculty of Science (U. Granada).
- Referee of the Eur. Phys. J. C and Physics Letters B journals.
- 5 “Quinquenios” (5 year periods of teaching activity at University level).
- High activity in Outreach activities: “The European Researchers Night”, “The Science Week”, “Coffee with Science”, “Science and Society”, talks and seminars at Schools, etc.