Hernán Asorey

Medical Physics Department
Comisión Nacional de Energía Atómica
and
Scientific Computing Unit
Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT)

Comisión Nacional de Energía Atómica
   DFM, Centro Atómico Bariloche
   ITeDA, Centro Atómico Constituyentes
Centro de Investigaciones Energéticas, Medioambientales y
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   Unidad de Informática Científica (temporal)

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Current Positions

2016-2022	Researcher (CNEA TNG 312 - Principal B) at the Medical Physics Department, Gerencia de Física (GF), Comisión Nacional de Energía Atómica (CNEA).
2021-2022	Researcher at the Scientific Computing Unit, Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT)

Key Performance Indicators (KPIs)

Education

2012	Doctor in Physics (Ph.D.)
	Institution: Particles and Fields Group, Centro Atómico Bariloche (CNEA) – Instituto Balseiro, Universidad Nacional de Cuyo (UNC). *Thesis*: The Water Cherenkov Detectors of the Pierre Auger Observatory and their Application to the Study of Background Radiation. *Advisor*: Dr. Ingomar Allekotte. Master
2005	in Science, Physics
	Orientation: High Energy Physics. *Institution*: Particles and Fields Group, Centro Atómico Bariloche (CNEA) – Instituto Balseiro (UNC). *Thesis*: Event Reconstruction with the Surface Detectors of the Pierre Auger Observatory. *Advisor*: Dr. Ingomar Allekotte
2004	"Licenciado" in Physics
	Institution: Instituto Balseiro, Centro Atómico Bariloche (CNEA-UNC)

Research and Teaching Activities

Since I have earned my master degree in December 2005, I have been involved in the following projects:

Medical Physics Department, CAB,(2016-Present)

Project manager of the PlomBOX project, an open device to measure lead contamination in tap water

Astroparticle detection applications (I): development of simulations and detectors for the calculation and measurement of spatial dose distribution in clinical and high-level dose environments

Development of new artificial-intelligence-based big data analysis, big data curation, big data anonymization and medical imaging analysis and processing.

Head of the Medical Physics Department (GF-GAIYANN-CNEA). Elected by the members of the Department (2017-2021).

ITeDA, CAC,(2018-Present)

Astroparticle detection applications (III): muography of big artificial and geological buildings: applications to volcanic risk assessment, mining prospecting and dams densitometry

Astroparticle simulations applications: application in muography, space weather and new radiation detectors and shielding designs.

Latin American Giant Observatory (LAGO) (2007-Present)

See *lagoproject.net*

Member of the LAGO Thematic Service at the Horizon 2020 EOSC-Synergy project.

Principal Investigator, 2013–2016

Design and execution of the project new organization

Design and coordination of the LAGO Space Weather program

Simulations and data analysis for the detection of transient events (GRB and Forbush events), background radiation and atmospheric physics.

Research, development and building of water-Cherenkov detectors for the LAGO project at Universidad Industrial de Santander and Centro Atómico Bariloche. One of them is currently installed and is operating at the Antarctic Peninsula.

Design and coordination of the experiment "Measurement of Muon Lifetime in Water", done by undergraduate students at Instituto Balseiro.

ANDES Underground Laboratory (2010-2013, 2015–2016, 2018-present)

See *www.andeslab.org*

Estimation and measurements of the expected backgrounds at the ANDES underground lab due to natural radioactivity and high energy atmospheric muons.

Laboratory design.

Muon veto for the ANDES experiments design

Teaching (2009-Present)

2015-present Associated Professor, Thermodynamics, Cosmology and Astrophysics, Modern Physics A and Wave Physics, Profesorado de Nivel Medio y Superior en Física, Sede Andina, Universidad Nacional de Río Negro (UNRN)

2012-2020 Lecturer of the "La Física del Proyecto LAGO", "Medición de la Vida Media del Muón" y "Simulaciones de Astropartículas" physics courses for graduate and postgraduate physics students. These courses were dictated during the annual meetings of the LAGO collaboration, and are still being dictated by some of my former students at LAGO.

2017-2021 Associated Professor, Astroparticle physics, Particle detection techniques, Double Doctorate in Astrophysics program, Universidad Nacional de San Martín (UNSAM)

2016-2020 Member of the Academic Committee of the Master in Medical Physics program of the Instituto Balseiro, Universidad Nacional de Cuyo (UNC).

2015-2017 Senior Teaching assistant (Jefe de Trabajos Prácticos), "Introduction to nuclear, particle physics and dosimetry" and "Cosmic Rays Physics" (lecturer) courses, Instituto Balseiro, Universidad Nacional de Cuyo (UNC)

2014-2015 Professor, Classical Mechanics (Graduate) and General Astronomy, School of Physics, UIS.

2013-2014 Professor, Introductory Physics course and Introductory Particle Physics course, UIS.

2014 Design and lecture of the course "Astro-meteorology and Climate Change", intended for High Schools teachers, UIS, March 2014.

2013 Professor, Advanced Mathematical Methods for Physics course, UIS.

2009-2012 Senior teaching assistant (Jefe de Trabajos Prácticos), Physics I A ⬚ B (introductory physics) course, UNRN.

2010-2012 Teaching assistant, Experimental Physics III and Introduction to nuclear and particle physics courses, Instituto Balseiro, Universidad Nacional de Cuyo (UNC)

Books, chapters and patents

2020 3. H. Asorey, C. Graziosi, A. López Dávalos, Física IA. De las galaxias a los quarks, Colección Lecturas de Cátedra, Editorial UNRN, 334 pg, Viedma, Argentina, ISBN 978-987-4960-29-0, 2020. Utilizado actualmente como libro de texto de los cursos de Física IA y Física IB de la Universidad Nacional de Río Negro (UNRN).

2020 2. H. Asorey, I. Sidelnik, J.J. Blostein, M. Gómez Berisso, J. Lipovetzky, M. Sofo Haro; M. Pérez; L.H. Arnaldi; F. Alcalde, PCT/IB2020/050869: "Usage of Water Cherenkov Detectors for the detection of Neutrons and Gamma Radiation"

2019 1. H. Asorey, I. Sidelnik, J.J. Blostein, M. Gómez Berisso, J. Lipovetzky, M. Sofo Haro; M. Pérez; L.H. Arnaldi; F. Alcalde, AR20190100279: "Detector de Neutrones y Radiación Gamma Mediante el Empleo de un Detector Cherenkov en Agua"

Human Resources Training Summary

Up to now, I am training or I have successfully trained a total of **18** students and fellows, **2** Post Doctoral researchers, **4** PhD students, **5** MSc students and **7** undergraduated students in Argentina, Venezuela and Colombia.

Publication summary

136 peer review journal publications.

88 participations and presentations at Schools ⬚ Conferences.

26 technical reports of Comisión Nacional de Energía Atómica and internal technical notes of the Pierre Auger Observatory.

See the complete list of publications, works and scitations in some of the following services:

Google Scholar : scholar.google.com.co/citations?user=Vj7_fGsAAAAJ

Scopus : www.scopus.com/authid/detail.url?authorId=35276880300

Inspire-HEP : inspirehep.net/author/profile/H.Asorey.1

Dr. Hernán Asorey, 14th March 2023