

Hernán Asorey

Medical Physics Department



Instituto de Tecnologías en Detección y Astropartículas (ITeDA)

Comisión Nacional de Energía Atómica

Comisión Nacional de Energía Atómica
DFM, Centro Atómico Bariloche, Río Negro
ITeDA, Centro Atómico Constituyentes, Buenos Aires
Argentina

Email: hernan.asorey@iteda.cnea.gov.ar

Discord: asoreyh#9106

Current Positions

- 2021-current Researcher (CNEA TNG 312 - Principal B) at the Medical Physics Department, Gerencia de Física (GF), and at Instituto de Tecnologías en Detección y Astropartículas (ITeDA), Gerencia de Área de Investigaciones y Aplicaciones No Nucleares (GAIYANN), Comisión Nacional de Energía Atómica (CNEA).
- 2018-current Associated Professor of the Física III B (Thermodynamics) and Física IV B (Introduction to Particle Physics, Astrophysics and Cosmology) courses of the Profesorado de Nivel Medio y Superior en Física of the Universidad Nacional de Río Negro (UNRN).

Education

- 2012 DOCTOR IN PHYSICS (PH.D.)
Institution: Particles and Fields Group, Centro Atómico Bariloche - Instituto Balseiro, CNEA-UNC.
Thesis: The Water Cherenkov Detectors of the Pierre Auger Observatory and their Application to the Study of Background Radiation. *Advisor:* Dr. Ingomar Allekotte.
- 2005 MASTER IN SCIENCE, PHYSICS
Orientation: High Energy Physics. *Institution:* Particles and Fields Group, Instituto Balseiro, Centro Atómico Bariloche (CNEA-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 & 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 in 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 and big data anonymization.

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 (II): muography of big artificial and geological buildings: applications to volcanic risk assesment, 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

Responsible 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 posgraduate 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
- 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 17 students and fellows, 2 Post Doctoral researchers, 4 PhD students, 4 MSc students and 7 undergraduated students in Argentina, Venezuela and Colombia.

Publication summary

127 peer review journal publications.

87 participations and presentations at Schools & Conferences.

25 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, 28th April 2022