Hernán Asorey

Medical Physics Department – Gerencia de Física

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

Phone: (+54-294) 444-5100 ext 4842
Phone: (+54-11) 6772-7000 ext 7596
Email: asoreyh@cab.cnea.gov.ar

Personal Information

Born in Quilmes, Buenos Aires, Argentina, on February 05th, 1974 (44 years old)
Argentinian, married, two daughters.

Current Positions

Head of the Medical Physics Department, Gerencia de Física (GF), Gerencia de Área de Investigaciones y Aplicaciones No Nucleares (GAIYANN), Centro Atómico Bariloche (CAB), Comisión Nacional de Energía Atómica (CNEA), peer choice August 2017.

Jefe de Trabajos Prácticos at Insituto Balseiro, Science Department, Universidad Nacional de Cuyo (UNCuyo, licence).

Associated Professor at Sede Andina, Universidad Nacional de Río Negro (UNRN, licence).

Associated Professor at the Double Doctorate in Astrophysics program, Universidad Nacional de San Martín (UNSAM).

Selected for incorporation to CONICET in the CIC-2016 call.

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 Ap-
2005 plication to the Study of Background Radiation. *Advisor*: Dr. Ingomar Allekotte. 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)

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

Development of simulations and detectors for the calculation and measurement of spatial dose distribution in clinical and high-level dose environments.

Pierre Auger Observatory (2006-Present)

See www.auger.org

Task leader of the "Cosmo-Geophysics" task of the Pierre Auger Observatory

Data analysis of the Surface Detector

Extensive Atmospheric Shower Physics

Development of the reconstruction event chain of the Surface Detector

Development and applications of the low energy modes (scaler and histogram modes) of the surface detectors of the Pierre Auger Observatory, for the study of transient events (Gamma Ray Bursts and Forbush events), and short and long term modulation of the galactic cosmic rays flux due to solar activity

CORSIKA and detector simulations, oriented to determine the water-Cherenkov response working in the low energy modes

Data analysis of the weather monitoring system of the Pierre Auger Observatory

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

See lagoproject.org

Principal Investigator, period 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 will be installed at the Antarctic Peninsula.

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

Cherenkov Telescope Array (CTA) (2010-2014)

See www.cta-observatory.org

San Antonio de los Cobres site characterization

Research and development of the autonomous station for control and data acquisition of the weather station and sky quality meter installed in San Antonio de los Cobres, Argentina, one of the site candidates for the CTA observatory.

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.

Teaching (2009-Present)

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

2015-present Associated Profesor, Thermodynamics, Cosmology and Astrophysics, Modern Physics A and Physics II B, Profesorado de Física, Sede Andina, Universidad Nacional de Río Negro (UNRN)

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, Physics I (introductory physics) course, UNRN.

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

2005 Member of the Academic Committee of the Master in Medical Physics program of the Instituto Balseiro, Universidad Nacional de Cuyo.

Additional Information

Languages: Spanish (Native); English (C1); French (A1)

Computing skills: Linux and Windows operative system. Preferred editor: VIm.

Programming skills: C/C++, Perl, Python, HTML, PHP, SQL, and Bash.

Technical computing and data analysis software skills: root, gnuplot, Mathematica, AutoCAD design software.

Human Resources Training

Underway

2018 PhD thesis advisor "Aplicaciones de detectores de partículas y radiación en Medicina y Geología", Rolando Calderón Ardila at the Universidad de San Martín, Argentina.

2015 PhD thesis coadvisor "Variaciones del flujo de radiación cósmica en el suelo y escenarios geofísicos", Mauricio Suárez Durán at the School of Physics, Universidad Industrial de Santander, Bucaramanga, Colombia.

Completed

2017 Master in Sciences thesis co-advisor "Eficiencia de un detector Cherenkov en agua para la detección de neutrones", Nicolás Guarín at the Instituto Balseiro, Universidad Nacional de Cuyo, Bariloche, Argentina.

2015 Master in Physis thesis advisor "Aplicaciones en Meteorología Espacial de los Datos del Proyecto LAGO", Yunior Perez at the Physics Department, Universidad de los Andes, Mérida, Venezuela, Qualification 20/20, Publication Mention.

2015 Master in Physis thesis advisor of "Búsqueda de Fuentes de Astropartículas en los Datos de la Colaboración LAGO", Christian Sarmiento Cano at the School of Physics, Universidad Industrial de Santander, Bucaramanga, Colombia. Qualification 5/5, Meritorious Mention.

2015 Master in Physis thesis advisor of "Modulación de Rayos Cósmicos Galácticos a nivel del suelo por cambios en el Campo Geomagnético y aplicaciones a Meteorología Espacial en el Proyecto LAGO", Mauricio Suárez Durán at the School of Physics, Universidad Industrial de Santander, Bucaramanga, Colombia. Qualification 5/5, Meritorious Mention.

2015 Physics thesis advisor of "Meteorología Espacial y la Navegación Aérea", Sergio Pinilla at the School of Physics, Universidad Industrial de Santander, Bucaramanga, Colombia. Qualification 5/5, Award-winning thesis.

2015 Physics thesis advisor "Sensibilidad del Proyecto LAGO a Señales Gamma provenientes del Centro de la Galaxia", Arturo Núñez at the Physics Department, Universidad de los Andes, Mérida, Venezuela, Qualification 20/20.

2015 Physics thesis advisor "Método de *Thinning* y *Dethinning* para Lluvias de Primarios de Alta Energía", Alex Estupiñán at the School of Physics, Universidad Industrial de Santander, Bucaramanga, Colombia, Qualification 5/5, Award-winning thesis.

2015 Physics thesis advisor "Simulación de los detectores Cherenkov en agua de la colaboración LAGO", Rolando Calderón Ardila at the School of Physics, Universidad Industrial de Santander, Bucaramanga, Colombia, Qualification 4.8/5.

2014 System Engineering thesis advisor "Visualización de Cascadas de Rayos Cósmicos sobre GPUs", Rafael Laverde at the School of System Engineering, Universidad Industrial de Santander, Bucaramanga, Colombia, Qualification 4.8/5.

2014 Physics thesis advisor "Estudios de la Respuesta del Arreglo de Detectores de Superficie del Observatorio Pierre Auger de Rayos Cósmicos", Lic. Jonathan David Bossio Solá, at the Facultad de Ciencias Exactas y Naturales, Universidad Nacional de Buenos Aires (UBA), Qualification 10/10.

Publication summary

90 peer review journal publications.

67 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:

ORCID : orcid.org/0000-0002-4559-8785

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