

# Hernán Asorey

**Particle and Radiation Detection Laboratory**  
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## Personal Information

Born in Quilmes, Buenos Aires, Argentina, on February 05<sup>th</sup>, 1974 (41 years old)  
Argentinian, married, two daughters.

## Current Positions

Researcher at Laboratorio Detección de Partículas y Radiación (LabDPR), Gerencia Tecnología e Investigación en Altas Energías (Technology and Research in High Energy Physics Department), Centro Atómico Bariloche, Comisión Nacional de Energía Atómica (CNEA).

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

Associated Professor at Sede Andina, 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:

PIERRE AUGER OBSERVATORY (2006-PRESENT)

See [www.auger.org](http://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](http://lagoproject.org)

Principal Investigator since 2013

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](http://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-PRESENT)

See [www.andeslab.org](http://www.andeslab.org)

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

TEACHING (2009-PRESENT)

See [www.ib.edu.ar](http://www.ib.edu.ar), [www.uis.edu.co](http://www.uis.edu.co), and [www.unrn.edu.ar](http://www.unrn.edu.ar)

Associated Profesor, Modern Physics A and Physics II B, Profesorado de Física, Sede Andina, Universidad Nacional de Río Negro (UNRN)

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

Professor, Introductory Physics course and Introductory Particle Physics course, UIS.

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

Professor, Advanced Mathematical Methods for Physics course, UIS.

Senior teaching assistant, Physics I (introductory physics) course, UNRN.

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

## Additional Information

Languages: Spanish (Native); English (B2); 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, spyder, Mathematica, AutoCAD design software.

## Human Resources Training

### UNDERWAY

- 2016 PhD thesis advisor , Luis Otiniano Ormachea at the Instituto Balseiro and Centro Atomico Bariloche, Universidad Nacional de Cuyo, Bariloche, Argentina.
- 2015 PhD thesis coadvisor , Mauricio Suárez Durán at the School of Physics, Universidad Industrial de Santander, Bucaramanga, Colombia.

### COMPLETED

- 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

- 2014 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

66 peer review journal publications.

51 participations and presentations at Schools & Conferences.

17 technical notes (GAP 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](https://orcid.org/0000-0002-4559-8785)

Google Scholar : [scholar.google.com.co/citations?user=Vj7\\_fGsAAAAJ](https://scholar.google.com.co/citations?user=Vj7_fGsAAAAJ)

Scopus : [www.scopus.com/authid/detail.url?authorId=35276880300](https://www.scopus.com/authid/detail.url?authorId=35276880300)

Inspire-HEP : [inspirehep.net/author/profile/H.Asorey.1](https://inspirehep.net/author/profile/H.Asorey.1)

COLCIENCIAS : [190.216.132.131:8081/cvlac/visualizador/generarCurriculoCv.do?cod\\_rh=0000005467](https://190.216.132.131:8081/cvlac/visualizador/generarCurriculoCv.do?cod_rh=0000005467)



Hernán Asorey  
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