Centro Latinoamericano de Física
Centre Latino-Américain de Physique
Centro Latino-Americano de Física

UNESCO
Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura

cnrs

CLAF-CNRS Latin-American Astro-particle Physics International Research Network

Ulisses Barres de Almeida (CLAF)

THE LATIN-AMERICAN CENTER FOR PHYSICS (CLAF)

An inter-governmental organization founded under the auspices of UNESCO in 1962 and hosted by CBPF, in Brazil

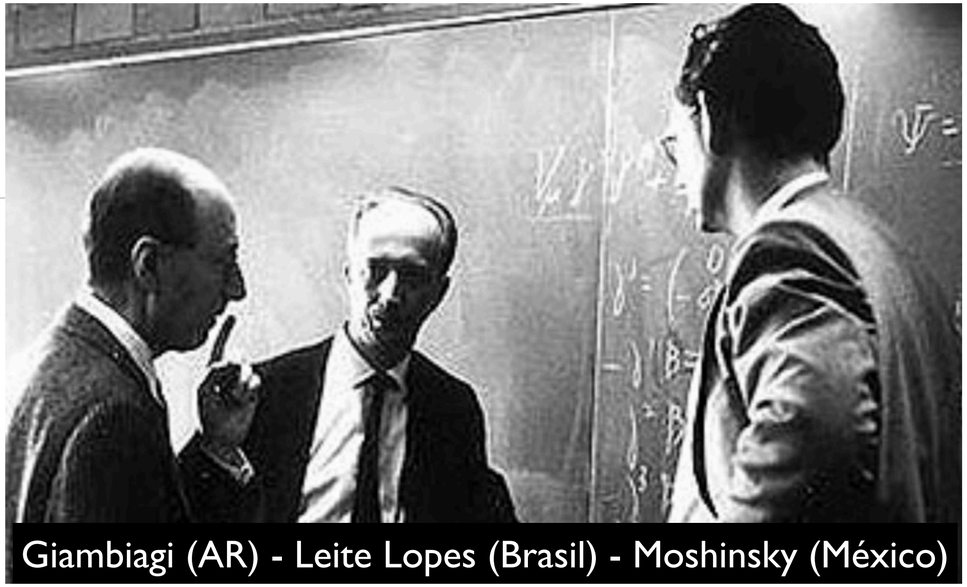
The mission of CLAF is

"To foster and facilitate the study and development of Physics in Latin American and Caribbean countries, through the promotion of collaboration and exchanges between institutions and individuals from these and other countries, as well as assistance in the training of human resources and the acquisition of the necessary financial resources for these purposes."

Some locations with research groups established by CLAF alumni or with CLAF support.

ORIGINS

III Latin-American School
1961 Rio de Janeiro



Giambiagi (AR) - Leite Lopes (Brasil) - Moshinsky (México)

Founded in 26 March 1962, following proposal of the Brazilian Government to the X UNESCO General Assembly and with the support of 12 countries of the region.

1961 UNESCO Expert Meeting,
Rio de Janeiro - Brasil

MAIN TOOLS AND ACTION PILLARS OF CLAF

CLAF Medium-Term Plan

Rolling work-plan approved by the General Assembly every 2 years : to reposition CLAF as the science diplomacy center for physics in Latin-America, in close partnership with UNESCO and the regional government and institutions

“Regionalization” of Large Facilities and Laboratories

To amplify the reach and impact of large regional research facilities (Sirus/CNPEM, LAHN/CNEA, LNFN/CNEN, etc.) and foster regional cooperation around local laboratories.

Regional Mobility Program Network

To establish and bring together into a single framework regional mobility programs in partnership with funding agencies and institutions throughout the continent (CNPq, CONICET, FAPERJ, ICTP, etc.) to create a network of mobility targeting strategic areas for the development of physics

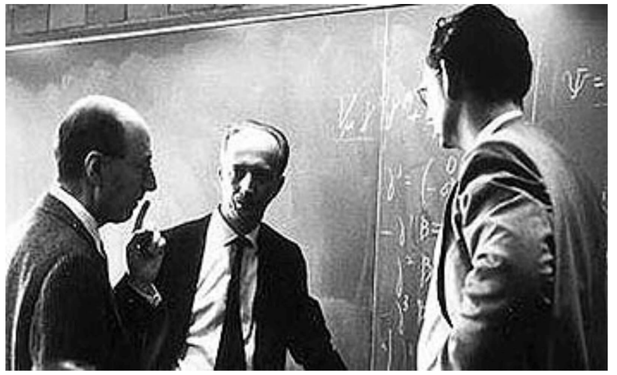
Regional Cooperation Forum in Physics

To create a permanent regional cooperation forum in physics, bringing together the scientific community, national institutions, governments and diplomats to discuss, identify opportunities and implement actions in strategic ares for regional development.

THEMATIC UNITS AS HUBS FOR REGIONAL COOPERATION ON KEY ISSUES

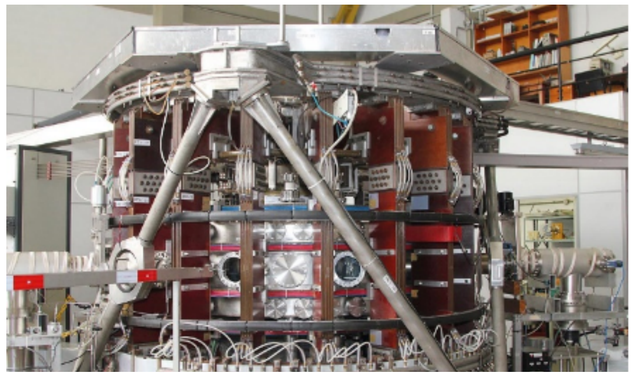
CLAF THEMATIC UNITS

Astro-particles

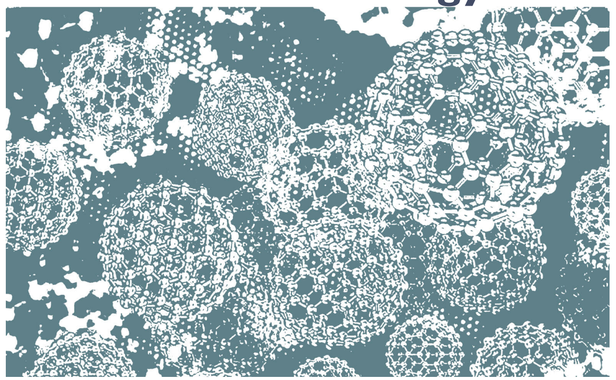


History of Physics

Nuclear Fusion



Nanotechnology



New Unit on Physics Education Recently Established by the Directive Council in December/2025

ASTRO-PARTICLE PHYSICS : CLAF-CNRS NETWORK

A Strategic Partnership in Astro-particle Physics for Latin-America

The goal of the CLAF-CNRS Latin-American Astro-particle Physics Network is to establish a Latin-American Network around the current and next-generation world-leading astro-particle physics and cosmology experiments in the continent with direct CNRS involvement.

1. ALPACA* / Chacaltaya
2. CONNIE* / Angra
3. CTAO Observatory
4. HAWC*
5. HERON Observatory
6. Pierre Auger Observatory
7. QUBIC Cosmology Telescope
8. Simons Observatory
9. SWGO Observatory

ASTRO-PARTICLE PHYSICS : CLAF-CNRS NETWORK

A Strategic Partnership in Astro-particle Physics for Latin-America

The network is motivated by the vision of bringing together into a single cooperation framework enabled by CLAF, the countries and their institutions developing research in astro-particle physics and cosmology around regional experiments, to exploring untapped synergies within the region and with the leading CNRS laboratories.

5 Universidad Industrial Santander

2 Universidad Mayor San Andrés

6
- INAOE
- UNAM*

7
- CONIDA
- Universidad Nacional Ingeniería
- Universidad Católica del Peru

3
- ON
- CBPF
- UNICAMP
- Universidade de São Paulo*
- Universidade Federal do ABC
- Universidade Federal do Paraná
- Universidade Federal do Rio de Janeiro
- Universidade Federal do Espírito Santo
- Universidade Estadual de Feira de Santana

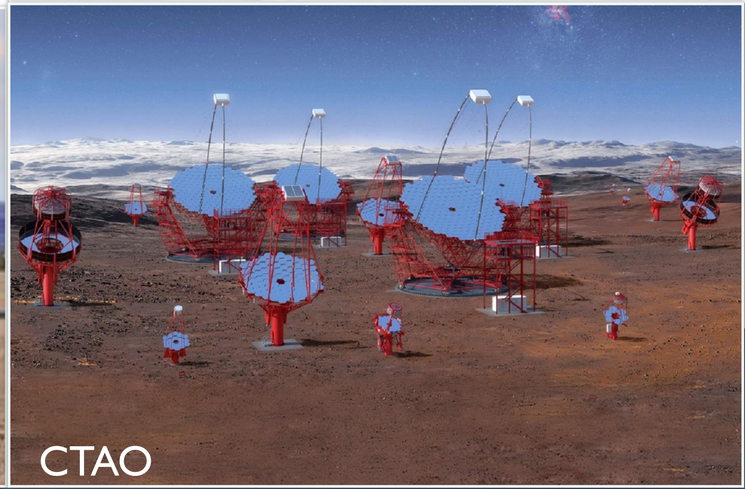
4
- UTFSM
- UMCE
- Universidad de Chile
- Universidad de La Serena
- Universidad de Antofagasta
- Universidad Andrés Bello

1
- CONACYT
- CNEA / ITEDA
- Instituto Balseiro
- Universidad de La Plata
- Universidad de Buenos Aires

ASTRO-PARTICLE PHYSICS : CLAF-CNRS NETWORK

A Strategic Partnership in Astro-particle Physics for Latin-America

As a result, the network aims to effectively expand the regional impact of the field and the associated experiments in the region, contributing to further integrate and develop the region scientifically, increasing research productivity at a modest additional investment, as well as form the future generation of Latin American researchers, under the guidance and co-leadership of CNRS



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Key Figures of the Field

6 large international experiments with CNRS/IN2P3 involvement

3 operational + 1 starting operations + 2 in preparation

Over 150 researchers directly involved from 30 Latin-American institutions, in 7 countries

Average 40-50 publications per year*

* Peer-reviewed publications only

Over 500 PhD Thesis with c.1/3 from Latin America**

** Direct counts

The Network Structure and Organization

THEMATIC PILLARS

COSMIC-RAYS AND NEUTRINOS

Represented by the active **Pierre Auger** Observatory and the **HERON** Neutrino Observatory in preparation in Argentina

GAMMA-RAYS

Represented by the **CTAO** Observatory in construction and the **SWGO** Observatory in preparation in Chile

COSMOLOGY

Represented by the **Simons** Cosmology Observatory in Chile and the **QUBIC** Telescope in Argentina (both active)

The Network Structure and Organization

MANAGED BY A STEERING COMMITTEE

ORGANIZATION OF EVENTS AND SCHOOLS

To annually promote and co-fund events in LatAm and France to network, share research results, and train students in the field.

SEED FUNDING OF TRANSVERSAL PROJECTS

To annually select and provide seed funding to proposed projects:

- Involving institutions from France and at least two LatAm countries
- Involving institutions and researchers from more than one experiment

Aim is to create a truly integrated network generating critical mass to advance the field by exploring already-installed latent capacity.

The Network Structure and Organization

MANAGED BY A STEERING COMMITTEE

GENERAL COORDINATION

LatAm:
Ulisses Barres, CLAF
CNRS / IN2P3 :
Marianne Lemoine, LP2I
CNRS / INSU :
Fabio Acero, IRL FSLAC

SCIENTIFIC PILLARS COORDINATION

Cosmic-rays & Neutrinos

- CNRS: Piera Ghia (LPNHE) & Claire Guépin (LUPM)
- LatAm: Ingo Allekotte (Argentina) & Luiz Núñez (Colombia)

Gamma-rays

- CNRS: Anne Lumière (APC) & Pierre Cristofari (LUX)
- LatAm: Claudio Dib (Chile) & Ibrahim Torres (México)

Cosmology

- CNRS: Josquin Errard (APC) & Raphael Gavazzi (LAM)
- LatAm: Federico Sanchez (Argentina) & Rolando Dunner (Chile)

THANK YOU FOR THE ATTENTION!

https://claffisica.org.br/

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CLAF-CNRS event

Strategic Partnership in Astro-particle Physics

15 APR 2026 — APC