CLAF/ICTP-SAIFR Latin-American Astroparticle Physics School 2025 & Estancia en UNICAMP

Centro
Latino Americano
de Física


Semana 1

CLAF/ICTP-SAIFR Latin-American Astroparticle Physics School

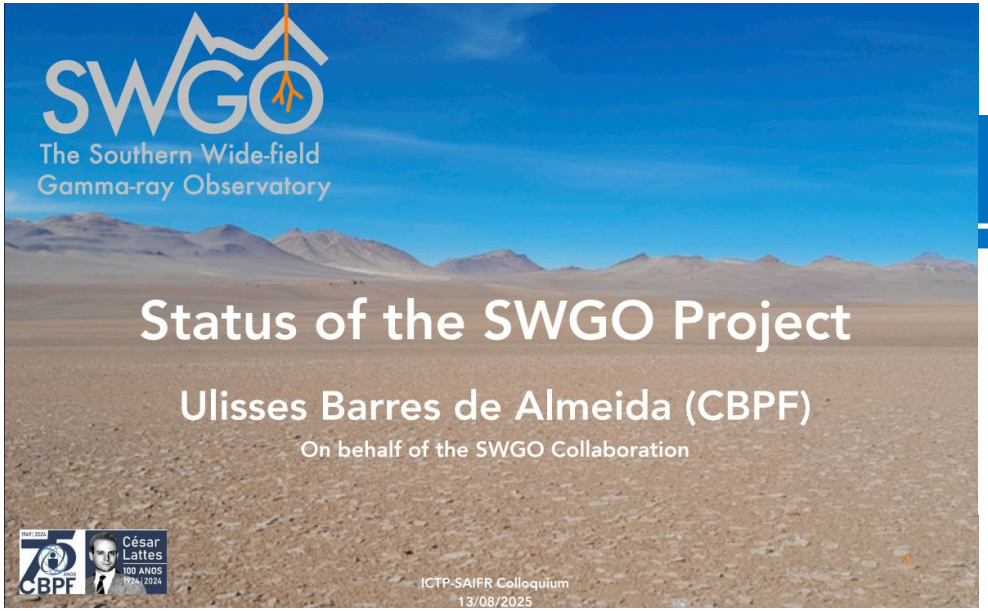
ICTP SAIFR · Claf · Centro Latino Americano de Física · FAPESP · ICTP · unesp · IFT - UNESP

Clases

– Introduction to HECRs: phenomenology, observations, and open questions
– Cosmic-ray acceleration and sources
– Extragalactic propagation of cosmic-rays
– Galactic propagation of cosmic rays
– Very-High Energy Galactic Sources
– Galactic PeVatrons
– Introduction to Cherenkov Telescopes
– Fundamental Physics with Gamma-rays I: Dark Matter and Other topics
– High-energy GRBs: Lessons learned from the Fermi mission and TeV observations
– The Gamma-ray role in multi-messenger observations of gravitational waves: From Fermi to ground-based observations
– Active Galactic Nuclei with Gamma-rays
– Active Galactic Nuclei and Multi-messenger neutrinos

https://www.ictp-saifr.org/claf-ictp-saifr-laaps/

Seminarios: Estatus de LHAASO y SWGO



Extensive Air-Shower Arrays and LHAASO

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CLAF/ICTP-SAIFR Latin-American Astroparticle Physics School, August 11 – 15, 2025

SWGO
The Southern Wide-field Gamma-ray Observatory

Shortlisted Sites

- All sites extremely flat with < 2% slope
- Shortlisting criteria included
  - → Science performance (array footprint + altitude)
  - → Site preparation and construction costs
  - → Construction and operations risks
  - → Environmental impact
  - → Social impact
- Engagement with local communities among priority factors in evaluation

SWGO
The Southern Wide-field Gamma-ray Observatory

Towards Construction : Core

Construction phase aimed to start 2027

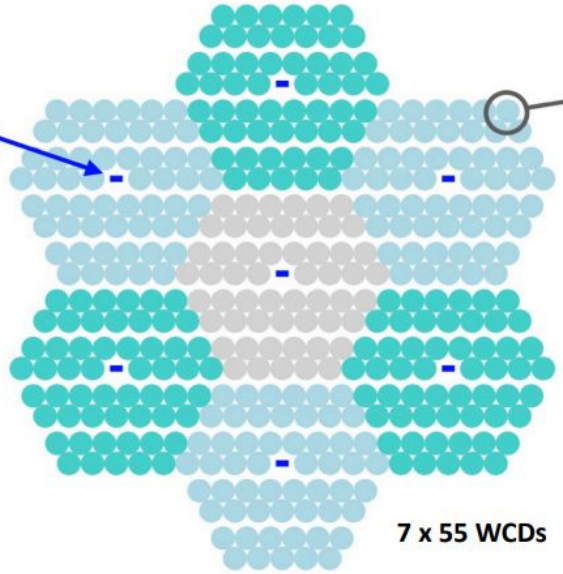
(A)

SWGO-A field node

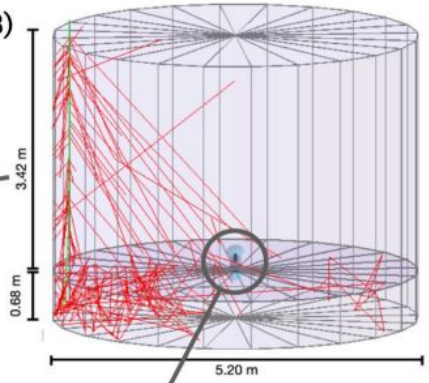
(C)

SWGO-A test tank at HAWC

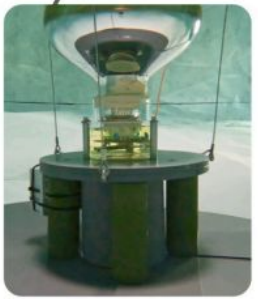
Array Layout of SWGO-A



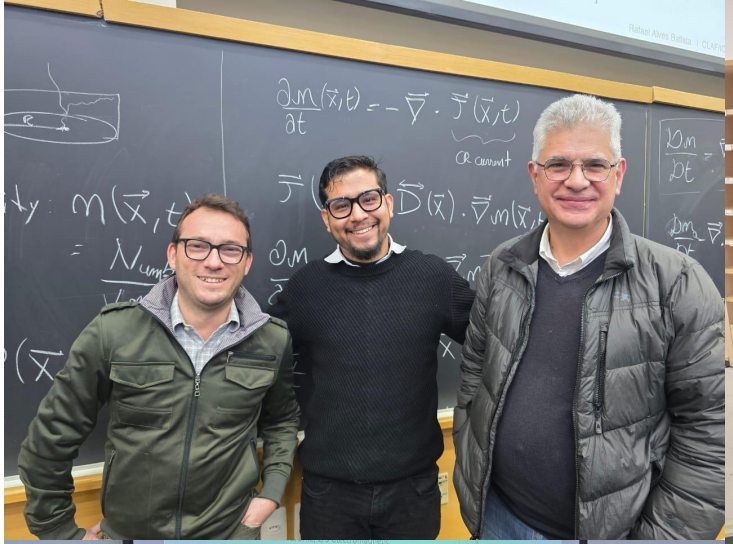
(B)



(D)



Dual-PMT unit deployed in dual bladder

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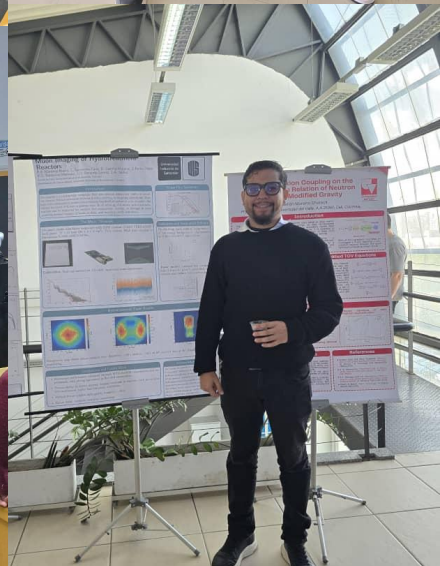








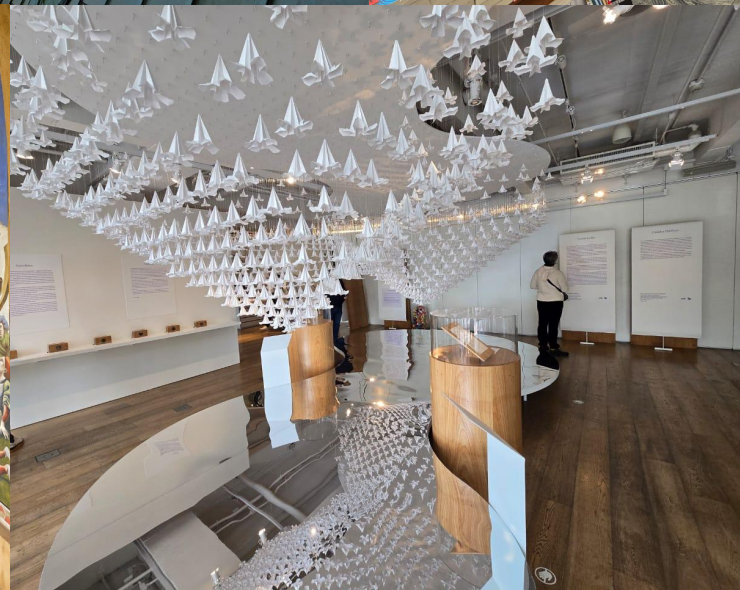

Semana 2

LAGO Workshop

ARTI & Meiga: From Particle Showers to Detector Signals

PhD. (c) Rafael A. Martínez R
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Transcrição da carta do Prof. H.Yukawa.

April 16, 1959

Kyoto University, Kyoto

Dear Prof. C.M.G.Lattes;

It is my sincere wish that this letter would help further advancing the collaborative relation between Brazil and Japan in the researches of fundamental physics.

In view of the very important role we expect the investigations of ultra high energy interactions would play in arriving at our final aim of understanding what "matter" really is, you would probably agree with me in saying that they must be carried out in the most extensive scope possible and by a close collaboration of experimental - and theoretical - physicists. A group of Japanese experimental physicists recognized this necessity and they organized in 1954 what they call "Co-operative Emulsion Group of Japan". The published results of their research activities, especially the ones concerning the transverse momenta of secondary particles in high energy jets, have been appreciated by the theoretical physicists of the field as contributing substantially to our knowledge of high energy interactions.

However, as you are well aware of, there are various difficulties in extending the investigation to a still higher energy region of 10^{15} ev or more. A careful examination of various factors have led them to undertake a new project of high energy physics by means of the emulsion chamber technique which in their previous studies proved itself very suitable for the analysis of ultra high energy interactions. They are considering the following three possibilities for the exposure of very large emulsion chambers. 1) The first is naturally the one by means of balloons but it does not at present seem feasible for them to expose a few tons of payload for sufficient amount of time mainly because of

O segundo o Prof. G.P.S.Occhialini ... essa idéia é tão boa como a do General que pensou em vencer a guerra.

Rio de Janeiro, 15th May ,1959

Hidéki Yukawa
Institute for Fundamental Physics
Kyoto University, Kyoto
Japan

Dear Prof. Yukawa,

Thank you for your letter of April 16th, re anc- international collaboration project with giant size emulsion chambers to be exposed in Bolivia.

I have discussed your letter with my colleagues and we feel that it would be wise to postpone our decision on the matter until after the International Meetings on Cosmic Rays and High Energy Physics which are to take place in URSS in July.

I will attend both meetings and shall contact Dr. Mishimura then.

Our emulsion group is just getting in good shape now. We have 11 scanning and 3 scattering microscopes, 11 scanners, of which 8 quite experienced. Our processing facilities are small 750 and 2 000 emulsion at a time. Our scientific personnel physicists, of which only three (G.Occhialini, A.Vatagnin and myself) have experience with high energy physics.

U.Camerini is abroad (Wisconsin, with Fry group). We do not know when he plans to come back and whether he does not prefer to work on machine exposed stacks. He will also be at the Russian meetings.

Please let Dr. Nishimura have a copy of this letter. I think that after we meet in Moscow, and hear about Camerini plans, we can reach a decision on the matter. It would be nice if Dr. Nishimura could extend his visit of laboratories so as to include Rio. We are prepared to meet with his living expenses while in Brazil and will be glad to send him an oficial invitation.

It was good to hear from you. Please give my best wishes and regards to Mrs. Yukawa and accept my best ones.

Cesar Lattes

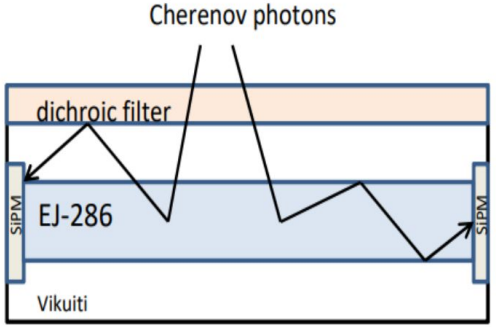
CLW/j..

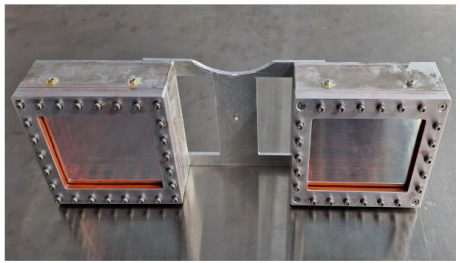
Water-Cherenkov Detectors at UNICAMP

Tanca

3 PMT 9” Photonis XP1805
11400 liters of ultrapure water

C-Arapuca





8 SiPM of 6x6 mm
550 liters of ultrapure water

Reporte del workshop

Rafael Martinez / **LAGO_workshop_ARTI_Meiga**

Name	Last commit	Last update
999900.sec	Upload New File	1 week ago
EAS3d.py	Upload New File	1 week ago
EASall.py	Upload New File	1 week ago
EASsec.py	Upload New File	1 week ago
EAStime.py	Upload New File	1 week ago
LAGO_Workshop_Slides.pdf	Replace LAGO_Workshop_Slides.pdf	6 days ago
README.md	Update README.md	1 week ago
arti.txt	Update arti.txt	1 week ago
docker_install.txt	Update docker_install.txt	1 week ago
docker_installation.sh	Upload .sh for installation	1 week ago
mufilter.sh	Add new file	6 days ago

README.md

LAGO Workshop – ARTI & MEIGA Simulation Environment

This repository contains the material used in the **LAGO Workshop**, focused on cosmic ray simulations with **ARTI** and detector response modeling with **MEIGA**.

📂 Repository Structure

- **arti.txt**
  Step-by-step instructions for running ARTI simulations.

Project information

- 37 Commits
- 1 Branch
- 0 Tags
- **25.7 MiB** Project Storage

- README
- Auto DevOps enabled
- + Add LICENSE
- + Add CHANGELOG
- + Add CONTRIBUTING
- + Add Kubernetes cluster
- + Add Wiki
- + Configure Integrations

Created on
August 19, 2025

8 sobrevivientes