

XV SILAFAE Report

XV Latin American Symposium on High Energy Physics

November 4 - 8, 2024, Cinvestav, Mexico city



Instituto de
Ciencias
Nucleares
UNAM



The **Latin American Symposium on High Energy Physics (SILAFAE)** is an event with a tradition of over 25 years, that brings together the regional and international community of particle physics and related areas such as cosmology, gravitation and astroparticle physics. The conference has been the main regional hub for discussions on topics in the relevant fields, knowledge updates and the exploration of new ideas and perspectives towards the future. The event also promotes the expansion of regional and international cooperation as well as the professional development of young scientists and students.

This is the 15th edition of the SILAFAE series, which will take place in Mexico City, Mexico, at the beautiful campus of [Cinvestav](#).

The conference format consists of a series of plenary and parallel talks covering a range of theoretical and experimental topics. Active posters sessions are also planned.

The SILAFAE conference started in 1996 in Mérida-Mexico, followed by editions in San Juan-Puerto Rico (1998), Cartagena de Indias-Colombia (2000), Aguas de Lindoia-Brazil (2002), Lima-Peru (2004), Puerto Vallarta-Mexico (2006), San Carlos de Bariloche-Argentina (2009), Valparaíso-Chile (2010), [São Paulo-Brazil \(2012\)](#), Medellín-Colombia (2014), [Antigua-Guatemala \(2016\)](#) and [Lima-Peru \(2018\)](#). The conference was cancelled in 2020 due to the Covid-19 pandemic but a special, remote version took place in 2021 in [virtual São Paulo-Brazil](#). Returning in-person for the 2022 edition, the event took place in [Quito-Ecuador](#).

Local Organizing Committee:

- Alexis Aguilar Arévalo (ICN-UNAM)
- Alejandro Ayala Mercado (ICN-UNAM)
- Eduard De La Cruz Burelo (Cinvestav)
- Manfred Kraus (IF-UNAM)
- Gabriel López Castro (Cinvestav)
- Omar Miranda Romagnoli (Cinvestav)
- Myriam Mondragón Ceballos (IF-UNAM)
- Pablo Roig Garcés (chair, Cinvestav)
- Alberto Sánchez Hernández (Cinvestav)
- Eric Vázquez Jáuregui (IF-UNAM)

International Scientific Committee: Pablo Roig (Cinvestav)

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- Tere Dova (UNLP)
- Esteban Roulet (Bariloche)

• **Bolivia:**

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- Rogério Rosenfeld (IFT-UNESP)

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- Marco Díaz (PUC)
- Claudio Dib (UTFSM)

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- Roberto Martínez (UNAL)
- Diego Restrepo (UDEA)

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- Alejandro Jenkins (UCR)

• **Cuba:**

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- Aurora Pérez Martínez (ICIMAF)

• **Ecuador:**

- Edgar Carrera (USFQ)

• **Guatemala:**

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- Juan Carlos D'Olivio (ICN-UNAM)
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• **Perú:**

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- Alberto Gago (PUCP)
- Joel Jones-Pérez (PUCP)
- Orlando Pereyra (UNI)

• **Puerto Rico:**

- Sudhir Malik (UPR)

• **Uruguay:**

- Lucía Duarte (UDELAR)
- Gabriel González-Springberg (UDELAR)

• **Venezuela:**

- Anamaría Font (UCV)

• **Italy:**

- Enrico Nardi (LNF)

• **United States:**

- Miguel Mostafa (Temple)
- John Swain (NEU)

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Scientific Programme

The following topics will be covered:

- Astroparticle physics
- Beyond the Standard Model physics
- Cosmology and gravitation
- Dark matter physics
- Electroweak, Top and Higgs physics
- Flavour physics and CP violation
- Neutrino physics
- New frontiers and computing in fundamental physics
- QCD, QGP and Heavy ion physics
- QFT, String, AdS/CFT
- Outreach and Education

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<https://indico.nucleares.unam.mx/event/2125/overview>

Plenary talks

Aristizábal, Diego: 'Coherent elastic neutrino-nucleus scattering'
Bazo, José: 'Status of SWGO'.
Bernardi, Gregorio: 'FCC'.
Cáceres, Elena: 'Black holes, holography'.
Camacho Toro, Reina: 'Higgs physics at LHC'.
Cieri, Leandro: 'QCD for colliders'.
Cottin, Giovanna: 'Long-lived particles'.
De la Macorra, Axel: 'DESI'.
Deshpande, Abhay: 'EIC'.
El Khadra, Aida: 'Muon g-2'.
Estrada, Juan: 'DM searches'.
Freitas, Ayres: 'SM EW fit'.
González, Magda: 'Exploring the extreme universe: key results from the HAWC observatory'.
Gorshteyn, Misha: 'First row CKM unitarity tests'.
Hernández Villanueva, Michel: 'Belle-II'.
Luna, Andrés: 'Amplitudes, the double copy, and black hole dynamics'.
Maldonado, Ivonne: 'NICA'.
Moreno, Claudia: 'Gravitational waves detection'.
Mulder, Mick: 'LHCb'.
Nunokawa, Hiroshi: 'New Physics with long baseline neutrino oscillations'.
Ochoa Ricoux, Pedro: 'Short baseline neutrino oscillations'.
Ortiz Velásquez, Antonio: 'ALICE'.
Restrepo, Diego: 'Neutrino masses and dark matter'.
Rosenfeld, Rogério: 'DES'.
Segreto, Ettore: 'DUNE'.
Shafi, Qaisar: 'Topological defects and gravitational waves'.
Tórtola, Mariam: 'Global neutrino fits and physics implications'.
Ureña, Luis: 'Ultra-light scalar dark matter'.
Velasco, Mayda: 'Electroweak physics at the LHC'.
Yaguna, Carlos: 'Dark matter'.

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Outreach and Education



- 27 plenary talks.
- 100+ contributed talks in parallel sessions (5 or 6 simultaneous, including a Workshop) during 4 days.
- A poster session with 40+ posters.
- Sessions on LA@CERN and FCC broadcasted via Zoom, as well as all the plenary program.
- Around 300 participants.
- Intense scientific exchange with lively discussions. We hope to see in the future collaborations across LA growing, thanks partly to this SILAFAE.
- Public lecture on 'Muon archaeometry projects in Mexico' and outreach activity on discovering the Higgs boson with ATLAS open data.
- Financial support for students and young postdocs.
- No harassment.
- Mexico City enjoyed (more to come on that before you leave)
- ...

So, SILAFAs are great, as this one! Who's next?

SILAFaE 2026/7 in ...

No applications were submitted by the (extended) deadline of the call. Two expressions of interest (from Colombia and Puerto Rico) are invited to present a full proposal by the end of January 2025. The ISC will discuss and decide the location of the next SILAFAE. If no proposals are submitted, there will be a new call with deadline in November 2025, to organize SILAFAE in 2027.