



Latin American Association for High Energy, Cosmology and Astroparticle Physics LAA-HECAP

Rogério Rosenfeld
IFT-UNESP/ICTP-SAIFR
On behalf of the Board

Talk at Giambiagi Cosmology School
Buenos Aires, July 18, 2023

Timeline

Brainstorming with the HEP community at ICTP-SAIFR 5th ann. and **XI SILAFAE** in Guatemala

Initial ideas



Iberoamerican Science and Technology Ministerial meeting in Guatemala: mandate declaration

Mandate



National Meetings and formation of the Preparatory Group with delegates from 10 LA countries.

Preparatory Group



Initial landscape

Two-page briefs of 18 experiments. Gathering support from national communities.

Town Hall

Town hall meeting at the **XII SILAFAE** in Peru to discuss mandate and next steps



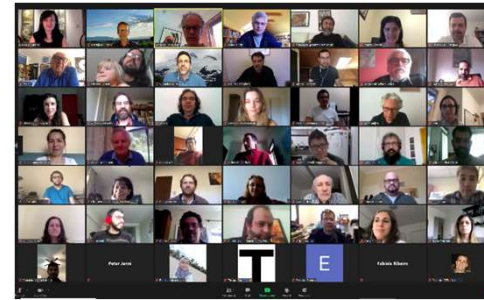
1st LASF4RI Workshop and Meeting of the Preparatory Group at ICTP-SAIFR

LASF4RI Workshop & 1st Meeting of Preparatory Group

Timeline

Deadline for the submission of White Papers to LASF4RI

White papers



Write-up of the Physics Briefing Book and the the Strategy Document.

Documents write-up



High-Level Strategy Group

Definition of the composition of the High-Level Strategy Group for HECAP

HLSG Meeting

Kick-off meeting of the High-Level Strategy Group

Open Virtual Symposium

Open Virtual Symposium of LASF4RI for HECAP organized by ICTP-SAIFR, delayed from March due to the pandemic

Timeline



Recognition of advances
LASF4RI-HECAP
process



**IB S+T
Ministerial
Meeting**



High-Level Strategy Group

Endorsement of Strategy Document to the High-Level Strategy Group for HECAP

Preparatory Group Meeting

Next steps for the Preparatory Group and national processes for next cycle

To be continued

Outcomes

LASF4RI

lasf4ri.org



Latin American Strategy Forum for Research Infrastructure

Developing a strategy to strengthen Latin American Scientific Collaborations and their impact.

First time a strategic planning process in HECAP, with community input, is done in LA.

Inspired by Snowmass process in the US and other processes elsewhere.
Community driven.

Recommendations based on white papers submitted.

39 white papers submitted!

Three main documents produced:

- LA-HECAP Physics Briefing Book
- Strategy Document with recommendations
- Endorsement letter from HLSG

lasf4ri.org

arXiv:2104.06852v1 [hep-ex] 14 Apr 2021

Latin American Strategy for Research Infrastructures for High Energy, Cosmology, Astroparticle Physics LASF4RI for HECAP

LATIN AMERICAN HECAP PHYSICS BRIEFING BOOK

Preparatory Group

Hiroaki Aihara - University of Tokyo
Reina Camacho Toro- LPNHE/CNRS
Marcela Carena - Fermilab/U. of Chicago
Juan Carlos D'Olivo - UNAM
Thiago Goncalves - Valongo Observatory
Diana López Nacir - DF/IFIBA UBA-CONICET
Jorge Molina - Universidad Nacional de Asunción
Diego Restrepo - Universidad de Antioquia,
Arturo Sánchez- ICTP/INFN/ U. of Udine
Marcelle Soares-Santos - U. Michigan
Hernán Wahlberg - U. Nacional de la Plata
Alfonso Zerwekh - U. Técnica Federico Santa María

Alfredo Aranda - University of Colima
Mauro Cambiaso - Universidad Andrés Bello
Edgar Carrera - Universidad San Francisco de Quito
Alberto Gago - Pontificia Universidad Católica del Perú
Gerardo Herrera - CINVESTAV
Marta Losada - NYUAD
Martijn Mulders - CERN
Rogerio Rosenfeld - IFT-UNESP & ICTP-SAIFR
Federico Sánchez - U. Nacional de San Martín
Martin Subieta - U. Mayor de San Andrés
Harold Yepes Ramirez - YTU

Very complex landscape revealed:

AstroParticles/Cosmology

- ALPACA
- LAGO
- AUGER
- HAWC
- DarkSide
- DAMIC
- TOROS/ABRAS
- QUBIC
- BINGO
- LLAMA
- LSST
- ASTRI
- CTA
- SWGO
- SAGO

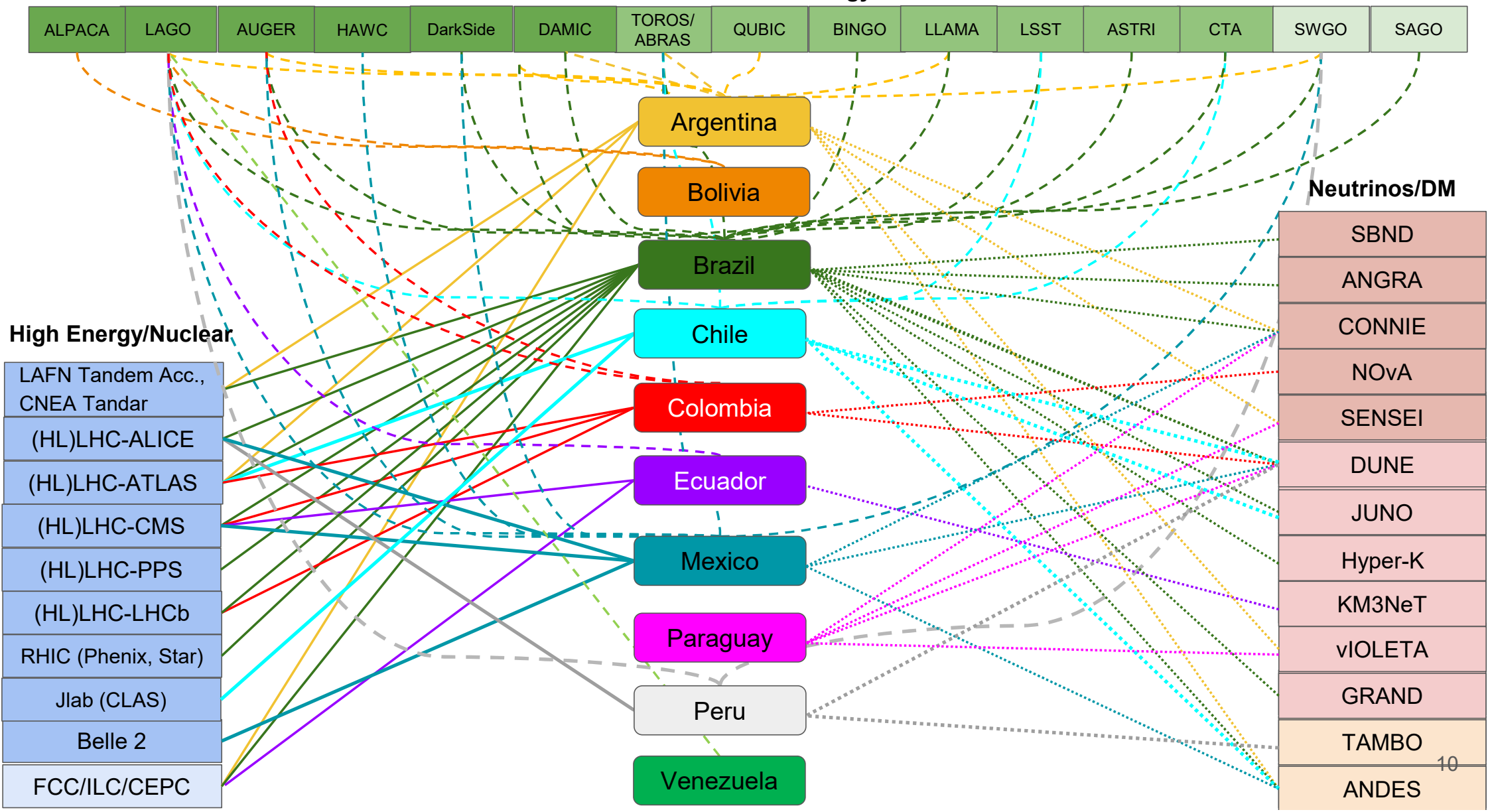
- Argentina
- Bolivia
- Brazil
- Chile
- Colombia
- Ecuador
- Mexico
- Paraguay
- Peru
- Venezuela

Neutrinos/DM

- SBND
- ANGRA
- CONNIE
- NOvA
- SENSEI
- DUNE
- JUNO
- Hyper-K
- KM3NeT
- vIOLETA
- GRAND
- TAMBO
- ANDES

High Energy/Nuclear

- LAFN Tandem Acc., CNEA Tandar
- (HL)LHC-ALICE
- (HL)LHC-ATLAS
- (HL)LHC-CMS
- (HL)LHC-PPS
- (HL)LHC-LHCb
- RHIC (Phenix, Star)
- Jlab (CLAS)
- Belle 2
- FCC/ILC/CEPC



PARTICLE PHYSICS & ASTROPHYSICS AROUND LATIN AMERICA



From symmetry magazine
(Fermilab)

**Latin American Strategy Forum for
Research Infrastructures for High Energy,
Cosmology, Astroparticle Physics
LASF4RI for HECAP**

Latin American Strategy for HECAP
Proposal submitted to the High Level Strategy Group

Strategy Document Committee

Alfredo Aranda, Diana López Nacir, Marta Losada, Rogerio Rosenfeld,
Arturo Sánchez, Federico Sánchez, Harold Yepes Ramirez

Preparatory Group

ARGENTINA: Diana López Nacir, Hernán Wahlberg, Federico Sánchez
ASIA-JAPAN: Hiroaki Aihara
BOLIVIA: Martin Subieta
BRAZIL: Thiago Goncalves, Rogerio Rosenfeld
CHILE: Mauro Cambiaso, Alfonso Zerwekh
COLOMBIA: Marta Losada, Diego Restrepo
ECUADOR: Edgar Carrera, Harold Yepes Ramirez
EUROPE-CERN: Martijn Mulders
MEXICO: Alfredo Aranda, Juan Carlos D'Olivo, Gerardo Herrera
PERU: Alberto Gago
PARAGUAY: Jorge Molina
USA: Marcela Carena, Marcelle Soares-Santos
VENEZUELA: Reina Camacho Toro, Arturo Sánchez

Date: October 1, 2020

Summary of Recommendations

Four major recommendations with regards to HECAP research infrastructures:

- Ensure a rich program of astro/astroparticle/cosmo experiments in the region *with enhanced participation of LA*.
- Develop on >10 year scale new facilities and areas of expertise in the region (**underground physics, gravity, neutrino astronomy**).
- Continue strong links and participation in major international projects in collider and neutrino physics *via a more focused, coordinated and impactful approach*.
- Maintain a balanced approach including smaller scale regional projects to drive new ideas and technological developments.

Five recommendations to strengthen the HECAP science program as a whole:

- R&D technologies
- Advanced training program
- Connections between theorists and experimentalists
- Computing and network infrastructures
- Societal engagement

One major recommendation for stability and continuity mechanisms in funding and cooperation across funding agencies in LA.

HIGH-LEVEL STRATEGY GROUP MEMBERS

Luciano Maiani – Chair
Fernando Quevedo - Co-Chair

Country/Regional Scientific Representatives

Argentina: Maria Teresa Dova

Brazil: Joao dos Anjos

Chile: Claudio Dib

Ecuador: Bruce Hoeneisen

Mexico: Jacobo Konigsberg

Venezuela: Jose Ocariz

Europe/CERN: Peter Jenni

Asia: Hesheng Chen

US: Francis Halzen/Gabriela
Gonzalez

ICFA/Fermilab: Pushpa Bhat

Asia Pacific: Geoffrey Taylor

Institute Directors

Nathan Berkovits, ICTP-SAIFR

Daniel de Florian, ICAS

Alvaro Ferraz, IIP

Jose Roque, LNL

Ignacio Bediaga, CLAF

Luis Felipe Rodriguez, MAIS

Endorsement by the High-Level Strategy Group

The **LASF4RI-HECAP Strategy Document** addresses several aspects that need to be simultaneously developed to sustain a thriving research environment which includes fostering R&D for key technologies, enhancing the computing and network infrastructures, advanced training of the younger generations, and broad dissemination of knowledge with increased initiatives for citizen science. The importance of reinforcing connections between theorists and experimentalists to advance the research questions posed and the exploration of answers through experimentation is clearly stated and is considered of great value by the HLSG.

The recommendation for stable and continuous mechanisms for funding and coordination at the level of funding agencies and research councils for HECAP is of paramount importance and this HLSG endorses it enthusiastically.

Finally, the HLSG strongly recommends that the HECAP community put in place a robust structure and mechanisms that would allow the community to come together, on a periodic basis, ideally about every five years, to examine progress and consolidate community input to develop and/or update the strategic plan for the region. The European Particle Physics Strategy Update and the United States “Snowmass” processes are examples of successful national/regional models. Such sustained and recurring community engagement in the strategy development process will ensure regional coordination in the participation, as well as in developing leading roles, in regional and global scientific research infrastructures. This would also facilitate funding agencies in their decision-making process to adequately support the HECAP efforts in Latin America.

Given the above considerations the High Level Strategy Group expresses its endorsement of the 2020 LASF4RI-HECAP Strategy Document.

2020 Iberoamerican S+T Ministerial Meeting

October 27 2020

- https://www.segib.org/wp-content/uploads/Declaracion-IV-RMCTI_ES.pdf

Recognition of LASF4RI-HECAP process:

Los avances en el establecimiento del Foro Estratégico Iberoamericano para las Grandes Infraestructuras, a partir del desarrollo de un programa piloto en el área de física de altas energías, astropartículas y cosmología, cuyos resultados se han plasmado en el documento estratégico para el desarrollo de estas disciplinas, que incluye la definición de recomendaciones y el establecimiento de una hoja de ruta.

Our results were presented at several conferences and venues:
American Physical Society, Snowmass, SILAF AE, Encuentro de Primavera (Particles and Fields), other regional meetings

New Timeline (continued)

1st Meeting of the new Preparatory Group

Mandate 2021-2023

You can find the by-laws at:

www.ictp-saifr.org/wp-content/uploads/2021/10/Latin-American-Association-for-High-Energy-Cosmology-and-Astroparticle-Physics.pdf



XII³/₄ SILAFEA EXPRESS

Creation of the Latin American Association for HECAP

XIV SILAFEA - Ecuador
1st LAA-HECAP General Assembly

LATIN AMERICAN ASSOCIATION FOR HIGH ENERGY, COSMOLOGY AND ASTROPARTICLE PHYSICS (LAA-HECAP)

LAA-HECAP is hereby established as an association of the Latin American research community in the fields of High Energy, Cosmology and Astroparticle Physics (HECAP). It aims to leverage and amplify the successful and growing dynamics of research in HECAP in Latin America, as demonstrated by the fruitful and long-term organization of the Latin American Symposium on High Energy Physics (Simposio Latino Americano de Física de Altas Energías - SILAFAE) series and the recent initiative to form a Latin American Strategy Forum for Research Infrastructures for HECAP (LASF4RI-HECAP - lasf4ri.org) with the participation of several countries in the region.

- ▶ Strengthen existing ties within the Latin American HECAP community and foster new and existing collaborations
- ▶ Engage the wider scientific community and the general public through the promotion of HECAP.
- ▶ Represent the Latin American HECAP communities in other scientific international bodies
- ▶ Announce activities in HECAP in the region through means such as periodic newsletters and a website
- ▶ Promote other activities such as the organization of symposia, workshops, schools, university-institution cooperation and exchange programs for students, and the production of educational and outreach material
- ▶ Engage with Ministries, funding agencies and other national authorities related to Science and Technology to promote the rollout and development of the current LASF4RI-HECAP process.
- ▶ Organize SILAFAE (Latin American Symposium on High Energy Physics) every two years.
- ▶ Coordinate periodic assessment and strategic planning within the LASF4RI-HECAP process.

Latin American Association for HECAP

Founded in November 2021 – 453 members today

Board: LASF4RI + SILAFAE

Chair: Rogerio Rosenfeld

Vice-chair: Fernando Quevedo

Executive Committee:

Diana López Nacir, Edgar Carrera, Diego Restrepo and Alfredo Aranda

Board with representatives from: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Peru, Venezuela

www.ictp-saifr.org/laa-hecap/



LATIN AMERICAN ASSOCIATION FOR HIGH ENERGY, COSMOLOGY AND ASTROPARTICLE PHYSICS

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This page is under construction. In particular, the menu above does not work yet.
Information below is correct and hopefully useful.

Overview

The Latin American Association for High Energy, Cosmology and Astroparticle Physics (LAA-HECAP) was created in November 2021. It aims to leverage and amplify the successful and growing dynamics of research in HECAP in Latin America, as demonstrated by the fruitful and long-term organization of the Latin American Symposium on High Energy Physics (Simposio Latino Americano de Física de Altas Energías – SILAFAE) series and the recent initiative of strategic planning through the Latin American Strategy Forum for Research Infrastructures for HECAP (LASF4RI-HECAP – lasf4ri.org), with the participation of several countries in the region.

The statutes of LAA-HECAP can be found [here](#). The current members of the Board and of the Executive Committee can be found [here](#).

[Announcements and News](#)

Social Media



Under Construction

XIV Latin American Symposium on High Energy Physics

Join now!

https://docs.google.com/forms/d/e/1FAIpQLSeY5pkzAMfmq-CjSlstdg3L3FZHTwMX667HHa_6xsRISPnqbvw/viewform

XIV Latin American Symposium on High Energy Physics

14 – 18 de nov. de 2022

XIV SILAFAE - Quito, Ecuador



Recent LAA-HECAP activities

- Project submitted to IDRC (not approved)
- Project submitted to BID (not approved)
- Project submitted to the ICTP Network Program (**approved**)
- Nomination of a LA representative to ICFA through CLAF
- Nomination of a LAA-HECAP representative to C11 of IUPAP
- Challenge to organize [ICHEP 2026!](#)
- Contact with Silvina Ponce - IUPAP
- Contact with CERN (Salvatore Mele)
- Contact with Fermilab (Marcela Carena)
- Contact with Global Research Council – executive secretary from FAPESP
- Begin preparation for XV SILAFAE in Mexico
- Begin preparation for Update of the LASF4RI Strategy Process:
 - Letter of intent (starting July 2023)
 - White papers (until July 2024)
 - LSF4RI-HECAP workshop (late 2024)
 - Writing up of documents (2025)

CONCLUSIONS

- The High Energy, Cosmology and Astroparticle Physics (HECAP) Latin American community has experienced rapid development in the past few years;
- SILAFEA has been the forum for discussions in HECAP in LA since 1996;
- A first bottom-up Strategy Planning in HECAP in Latin America was done by LASF4RI in 2019-2020;
- Community created LAA-HECAP in 2020 to coordinate efforts in the region;
- An update of the Strategy Planning will start in 2023.

Back-up slides

LASF4RI-HECAP Preparatory Group 2021-2023

Chair: Rogerio Rosenfeld; Co-chair: Diana López Nacir

Argentina

Diana López Nacir
Federico Sánchez
Hernán Wahlberg

Bolivia

Martín Subieta

Brazil

Jailson Alcaniz
Ignácio Bediaga
Rogerio Rosenfeld

Chile

Alfonso Zerwekh
Mauro Cambiaso

Colombia

Nicolás Bernal
José David Ruiz Álvarez

Ecuador

Francisco Yumiceva
Dennis Cazar Ramírez,
Harold Yepes

Central America

Maria Eugenia Cabrera - Guatemala
Melissa Cruz Torres - Honduras
Federico Muñoz - Costa Rica

Mexico

Alfredo Aranda
Juan Carlos D'Olivo
Gerardo Herrera

Paraguay

Jorge Molina

Peru

Alberto Gago

Venezuela

Reina Camacho Toro
Arturo Sánchez Pineda
José Antonio López

International

Marcela Carena
Martijn Mulders

Marta Losada (ex-officio)

ADMISSIONS COMMITTEE:

- Federico Muñoz <federico.munoz@gmail.com> (Costa Rica)
•Hermann Albrecht <albrecht@usb.ve> (Venezuela)

EDUCATION COMMITTEE:

- Oscar Alberto Zapata Noreña <oalberto.zapata@udea.edu.co> (Colombia)
• Susana Landau <slandau@df.uba.ar> (Argentina)
•Gabriel R. Bengochea <gabriel.bengochea@gmail.com> (Argentina)
•Anamaría Font <anafont@yahoo.com> (Venezuela)
•Jose David Ruiz Álvarez <josed.ruiz@udea.edu.co> (Colombia)
•Ana Luiza Serio (ICTP-SAIFR coordinator for high-school teachers) analuserio@ictp-saifr.org (Brazil)
•Martijn Mulders <martijn.mulders@cern.ch> (CERN)

JUSTICE, EQUITY, DIVERSITY AND INCLUSION (JEDI) COMMITTEE:

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•Carla Bonifazi <carla.bonifazi@me.com> (Argentina)
•Santiago Paredes <santiagoparedes6@gmail.com> (Ecuador)

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•Hermann Albrecht <albrecht@usb.ve> (Venezuela)

STATISTICS COMMITTEE:

- Diego Restrepo <restrepo@udea.edu.co> (Colombia)
•Gabriel Abellán de la UCV <gabriel.abellan@gmail.com> (Venezuela)
•Hernan Wahlberg <wahlberg@fisica.unlp.edu.ar> (Argentina)
•Manuel Morales Alvarado <mom28@cam.ac.uk> (Chile)

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•Ignacio De Bediaga Hickman <ignacio.de.bediaga.e.hickman@cern.ch> (Brazil)
•Jose Feliciano Benitez <Jose.Benitez@cern.ch> (Mexico)

Newsletter – check your email

LAA-HECAP - Announcements and News Externa Caixa de entrada x



LAA-HECAP por_bnc3@mailjet.com
para mim ▾

qui., 8 de set. 16:03



XIV Latin American Symposium on High Energy Physics

The XIV Latin American Symposium on High Energy Physics (SILAF AE) will take place in November 14-18, 2022 in Quito, Ecuador. The SILAF AE conference series is a traditional event that brings together the community of Particle Physics and related areas such as Cosmology, Gravitation and Astrophysics. The conference has been the main regional hub for discussions on topics in the relevant fields, updates of the recent developments, and exploration of new ideas and perspectives towards the future. The

Recent LAA-HECAP talks

Particle Physics in Latin America

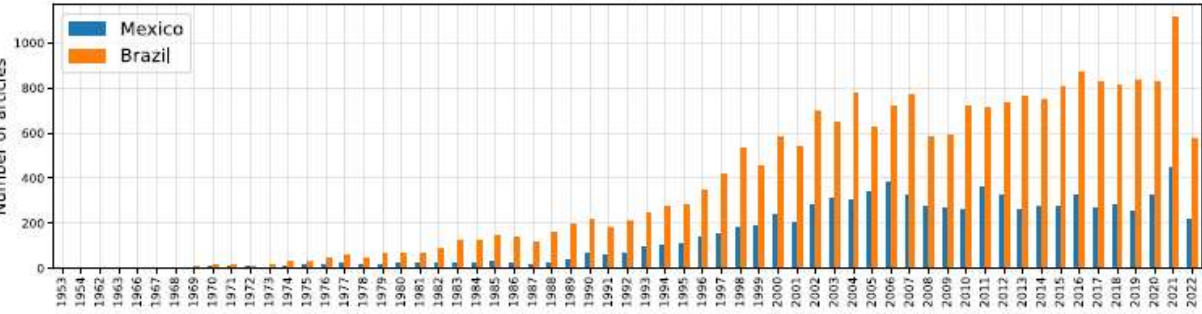
Fernando Quevedo
University of Cambridge UK
Snowmass 2022
July 25 2022

ROADMAP FOR THE FIRST STRATEGY FOR LATIN AMERICAN PHYSICS

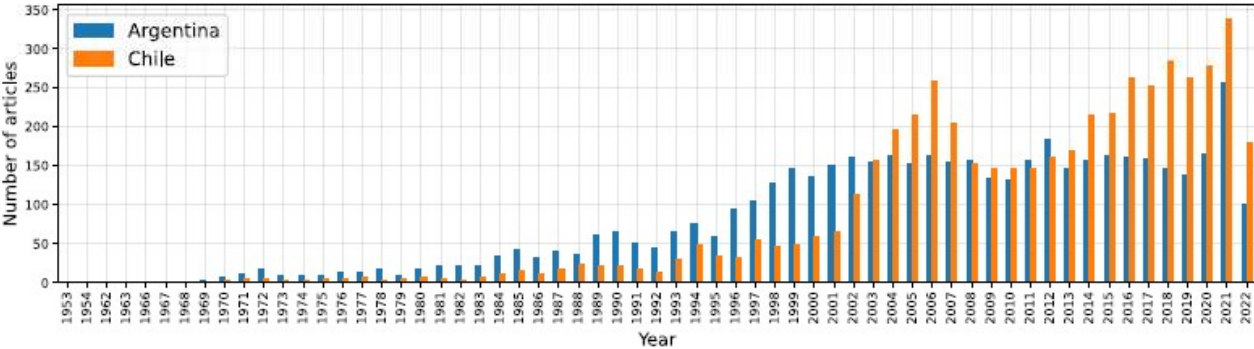


Systematic study of research in the region...

Articles per year



D. Restrepo
M. Morales, FQ, M. Ramos
Work in progress...



Articles per year

