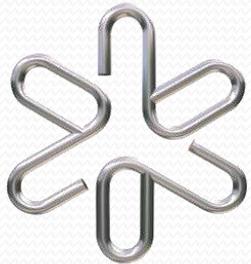


Latin American Association of Nuclear Physics and Applications

ALAFNA



Asociación Latinoamericana de Física Nuclear y Aplicaciones



Nilberto Heder Medina

Instituto de Física

Universidade de São Paulo, São Paulo, Brazil



WG9: International Cooperation
in Nuclear Physics (ICNP)



International Union of Pure and Applied Physics

May, 28th 2025

Historical Background

First Latinamerican Symposium on Nuclear Physics and Applications, Caracas, Venezuela, 1995



Photos from Prof. Laszlo Sajo-Bohus (USB, Caracas, Venezuela)

First Latinamerican Workshop on On and Off Beam Gamma Spectroscopy for the Study of Heavy Ion Reactions and Pre-Equilibrium Processes, Caracas, 1995

Laszlo Sajo-Bohus (USB)

Jacinto Liendo (USB)

Ettore Gadioli (Milan)

E. Gadioli-Erba (Milan)

Peter E. Hodgson (London)

Mark B. Chadwick (USA)

Michael Thoennesen (USA)

Sam L. Tabor (USA)

Fernando Cristancho (Colombia)

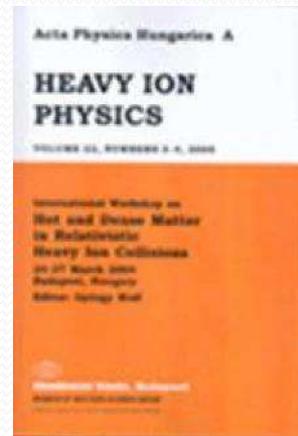
Istvan Lovas (Hungary)

Giuseppe Viesti (Padova)

Marten Brenner (Finland)

Franco Camera (USA)

N.R. Fletcher (USA)



The Latin-American Symposia on Nuclear Physics and Applications (LASNPA) take place every two years since 1995, in different countries of Latin America:

Caracas, 1995, I Latinamerican Workshop on Nuclear Physics, Venezuela

Caracas, 1997, II Latinamerican Workshop on Nuclear Physics, Venezuela

San Andres, 1999, III Latinamerican Workshop on Nuclear Physics, Colombia

Ciudad de Mexico, 2001, IV Latinamerican Symposium on Nuclear Physics, Mexico

Santos, 2003, V Latinamerican Symposium Nuclear Physics, Brazil

Iguazu, 2005, VI Latinamerican Symposium Nuclear Physics and Applications, Argentina

Cuzco, 2007, VII LASNPA, Peru

Santiago, 2009, VIII LASNPA, Chile

2009 ALAFNA Founding Meeting

Quito, 2011, IX LASNPA, Ecuador

Montevideo, 2013, X LASNPA, Uruguay

Medellin, 2015, XI LASNPA, Colombia

Havana, 2017, XII LASNPA, Cuba

San Jose, 2020, XIII LASNPA, Costa Rica

Mexico, 2024, XIV LASNPA, Mexico

Association of Latin American Nuclear Physics and Applications (ALAFNA)

Bylaws



Association of Latin American Nuclear Physics and Applications (ALAFNA)

Bylaws

ALAFNA stands for the ASOCIACIÓN LATINO-AMERICANA DE FÍSICA NUCLEAR Y APLICACIONES (Spanish) and ASSOCIAÇÃO LATINO-AMERICANA DE FÍSICA NUCLEAR E APLICAÇÕES (Portuguese). ALAFNA is a regional association of professionals in nuclear science and its applications, who belong to Latin American countries and participate in ALAFNA according to the rules given below.

ALAFNA was formed in 2009 on the occasion of the VIII Latin American Symposium on Nuclear Physics and Applications that took place in Santiago, Chile.

Objectives

1. To strengthen existing ties among the Latin American communities doing nuclear research and applications and to foster collaborations and the promotion of activities. The official activity supported by ALAFNA is the LASNPA, Latin American Symposium on Nuclear Physics and Applications, that takes place every two years. Other activities are the organization and promotion of symposia, workshops, schools, university-institution cooperation and exchange programs for students, and the production of educational and outreach material.
2. To educate the scientific community and the general public through the promotion of nuclear physics and the peaceful uses of nuclear technology.
3. To do periodic overall assessments of nuclear science in Latin America in the context of worldwide activities.
4. To represent the Latin American Nuclear Physics and Applications communities in other expert communities such as NuPECC, ANPhA, and other similar scientific international bodies.

Membership

1. ALAFNA is a regional association of professionals. The members of ALAFNA must belong to organizations in nuclear science in Latin America. In exceptional situations, they can also be Latin American scientists working in a nuclear science organization in other countries.
2. The Latin American countries that have organized LASNPA meetings (Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Mexico, Peru, Uruguay, and Venezuela) can be represented in ALAFNA by their professionals. As soon as a new country completes the organization of a LASNPA, its representatives can become ALAFNA members.
3. The number of ALAFNA members from a member country is at most three. Each country chooses its own method of naming its representatives. Each representative will be member of

ALAFNA during four years after a nomination. In exceptional cases, a country may propose to be represented by a Latin American nuclear scientist working in another country.

Governance

1. ALAFNA is governed by a Board composed of four members elected for one term by the members among the current membership by a simple majority. Elections take place every two years, which is called "a term". The election is electronic. No immediate reelection for the same or a different position in the Board is permitted.
2. The members of the Board are the Immediate-Past-Chair, the Chair, the Vice-Chair, and the Secretary.
3. The Vice-Chair and the Secretary are elected every term.
4. After finishing the term the Vice-Chair was elected for, the Vice-Chair becomes the next term Chair, if willing to, after confirmation by the ALAFNA general meeting.
5. After finishing the term the Chair was elected for, the Chair becomes the next term Immediate-Past-Chair, if willing to, after confirmation by the ALAFNA general meeting.
6. The limit of four years (Membership item 3.) does not apply to the person serving consecutively as Vice-Chair, Chair, and Immediate-Past-Chair, who will cease being a member after six years in the Board.
7. The Chair, Vice-Chair, and Secretary will be responsible to promote the activities mentioned in the Objectives during their term as members of the Board.
8. The appropriate transfer of executive experience and from one term to the next is guaranteed by the presence of the Immediate-Past-Chair.
9. ALAFNA Board meetings will be held at least once a year, with remote (electronic) presence of the Board members.
10. The Chair will call the Board meetings and prepare the agenda based on the input from the Board and the ALAFNA members. The Chair is responsible for maintaining a public web site where information, documents, and news will be published. The Vice-Chair will assist the Chair in the execution of activities and, during the LASNPA event, will organize the selection of the next LASNPA site. The Secretary is responsible for the due-time distribution of the agenda, the production of meeting minutes, and their subsequent distribution among the ALAFNA members.
11. An ALAFNA general meeting, with the face-to-face or remote presence of the ALAFNA members, will be called by the Board and held during each LASNPA.

Steering Committee

1. The initial operation of ALAFNA has been overseen by a steering committee formed by the founders of the organization, increased every 2 years by the addition of LASNPA organizers.
2. The steering committee has been responsible for the establishment of the ALAFNA bylaws, the representation of ALAFNA in expert committees and international organizations, and the overall promotion of ALAFNA's mission and goals in the regional and international scientific community.
3. The steering committee will be dissolved as soon as the first ALAFNA Board is established.

ALAFNA Steering Committee

- Ricardo Alarcon (Arizona State University, Arizona), USA
- Hugo Arellano (Universidad de Chile, Santiago), Chile
- Edy Ayala (Escuela Politecnica Nacional, Quito), Ecuador
- Haydn Barros (Universidad Simon Bolivar, Caracas), Venezuela
- Carlos Bertulani (T&A Commerce University, Texas), USA
- Roelof Bijker (UNAM, Mexico City), Mexico
- Laszlo Sajo Bohus (Universidad Simon Bolivar, Caracas), Venezuela
- Maria Ester Brandan (UNAM, Mexico City), Mexico
- Fernando Cristancho (Universidad Nacional, Bogota), Colombia
- Mario Cubero (Universidad de Costa Rica, San Jose), Costa Rica
- Ana Cabal Rodriguez (CEADEN, Havana), Cuba
- Raul Donangelo (Universidad de la Republica, Montevideo), Uruguay
- Carlos Granja (Advacam, Prague), Czech Republic
- Andres Kreiner (Tandar, CNEA, Buenos Aires), Argentina
- Alinka Lepine-Szily (Universidade de Sao Paulo, Sao Paulo), Brazil
- Rubens Lichtenthaler (Universidade de Sao Paulo), Brazil
- Nilberto Medina (Universidade de Sao Paulo), Brazil
- Modesto Montoya (Instituto Peruano de Energia Nuclear), Peru
- Roberto Morales (Universidad de Chile), Chile
- Oscar Naviliat Cuncic (NSCL, Michigan), USA
- Alberto Pacheco (Tandar, CNEA), Argentina
- Roberto Ribas (Universidade de Sao Paulo, Sao Paulo), Brazil
- Norberto Scoccola (TANDAR, Buenos Aires), Argentina
- Diego Torres (Universidad Nacional, Bogota), Colombia
- Stella Veloza (Universidad Nacional, Bogota), Colombia
- Alejandro Valda (UNSAM, Buenos Aires), Argentina

Objectives of ALAFNA



To strengthen collaboration among Latin American communities engaged in nuclear research and applications, fostering joint initiatives and promoting related activities.

The official activity supported by ALAFNA is the LASNPA, Latin American Symposium on Nuclear Physics and Applications, that takes place every two years. Other activities are the organization and promotion of symposia, workshops, schools, university-institution cooperation and exchange programs for students, and the production of educational and outreach material

To enhance the understanding of nuclear physics and the peaceful uses of nuclear technology through educational outreach to both the scientific community and the general public.

To periodically assess the state of nuclear science in Latin America in the context of global developments and trends.

To facilitate multi-national discussions on the future direction and strategic planning of nuclear science activities in Latin America.

ALAFNA NEWS



In the last semestre there was an election to vote for the new ALAFNA members.

New ALAFNA representants:

Argentina: Rodolfo M. Id Betan, Alejandro Valda and Andrés Kreiner

Brazil: Leandro Romero Gasques, Leticia Faria D. Palhares and Nilberto H. Medina

Chile: Rafael Correa and Jose Barea

Colombia: Diego Torres

Costa Rica: Arnold Molina Porrás and Mario Cubero

Cuba: Amaya Ofelia Casanova Díaz and Iván Padrón Díaz

Ecuador: Esteban Irribarra and Carlos Granja

Mexico: Héctor Alva-Sánchez and Libertad Barón-Palos

Peru: Modesto Montoya

Uruguay: Carolina Rabin and Alfredo Estradé

Venezuela: Haydn Barros and Johnny Salas

ALAFNA NEWS

An election among ALAFNA members chose the new board for the 2024-2026 biennium

New ALAFNA board:

Secretary : Rodolfo M. Id Betan (Argentina)

President: Nilberto H. Medina (Brazil)

Vice-president: Diego Torres (Colombia)



Proposed Actions

- New webpage (alafna.org) e-mail: lasnpa@gmail.com

Information about Nuclear Physics activities in Latinamerica.

- Collect information about Nuclear Physics and Applications in Latinamerican countries

- Organize the next LASNPA

The next LASNPA will be orgnized in Brazil in the first week of Dec. 2026

- Write a white paper about the activities in Nuclear Physics and Applications in all State members.
- Prepare a paper about ALAFNA and its activities to be published.

ALAFNA NEWS

Proposed Actions

- Demand recognition of our existence from all Latin American Physical Societies.



Brazilian Physical Society



Asociación Física Argentina



- Encourage scientific cooperation between Latin American nuclear physicists.
- Facilitate student mobility
- Define strategies for the near future in Nuclear Physics in Latin America.



International recognition of ALAFNA

- **WG9-IUPAP.** Since 2010 ALAFNA participate on the Working Group 9 (Collaboration in Nuclear Physics) of IUPAP (International Union of Pure and Applied Physics)

WG9: International Cooperation in Nuclear Physics (ICNP)



International Union of Pure and Applied Physics

- **NuPECC .** Since 2012 ALAFNA is an observer member of NuPECC



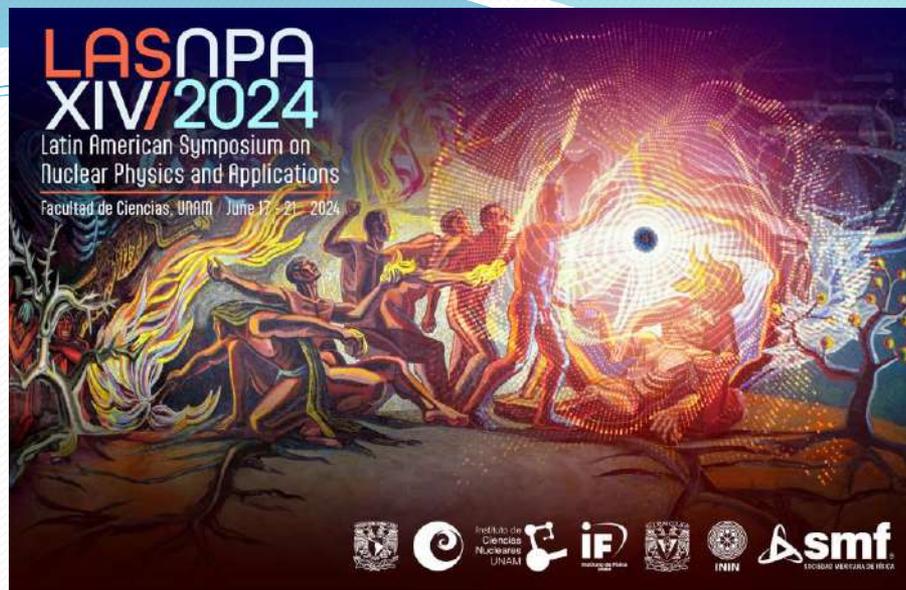
Nuclear Physics European Collaboration Committee

Latinamerican Symposium on Nuclear Physics and Applications (LASNPA)

Since its beginning, the Symposium has been the leading event for Latin American research groups, dedicated to advancing the dissemination of nuclear science and related fields. It covers a broad spectrum of topics, ranging from fundamental to applied research, with a particular focus on the work of Latin American research groups.

The event offers a high-quality platform for exchange and networking among researchers, professionals, and students, attracting an international audience from around the globe.

It provides a space where the Latin American community can present new advancements, concepts, and innovative approaches, explore emerging trends and solutions, and receive valuable feedback from experts in various fields. This series of symposia is attended by some of the most prominent nuclear physicists in Latin America, with participation from renowned scientists across the USA, Europe, and Asia.



June 17-21 2024



23 Plenary talks
46 invited talks

Participants from Argentina, Brazil, Chile, Colombia, Cuba, Mexico, Peru, and Uruguay, as well as from Canada, France, Germany, the Netherlands, Italy, Poland, Spain, Sweden, and the United States.

<https://www.nucleares.unam.mx/lasnpa2024/index.html>

UPCOMING EVENT

XV Latin American Symposium on Nuclear Physics and Applications



Scope and Main Topics

Scope

- The dissemination of the major theoretical and experimental advances in the field of nuclear science and its applications
- Encourage collaboration among the researchers participating in the symposium.
- Facilitate student participation in the symposium.

Main Topics

- Nuclear Structure and Reactions
- Nuclear and Particle Astrophysics
- Cosmic Rays
- Hadron Structure and Phases of Nuclear Matter
- Tests of Fundamental Symmetries and Properties of Neutrinos
- Nuclear Instrumentation and Facilities
- Applications: Medical Physics, Art/Archeology, Energy, and Space.

XV Latin American Symposium on Nuclear Physics and Applications



University of São Paulo (USP)

A 4-day symposium in **December 2026**.

Plenary sessions in the morning

Parallel and poster sessions in the afternoon

Approximately 150-200 participants

Fund raising (Brazilian funding agencies, CLAF, ICTP, IAEA, IUPAP, ...)



International Advisory Board

Alfredo Estradé (MSU, USA)
Alfredo Galindo Uribarri (ORNL, USA)
Alinka Lépine (USP, Brazil)
Amaya Ofelia Casanova Díaz (InSTEC, Cuba)*
Andres Kreiner (TANDAR, Argentina)
Ani Aprahamian (Notre Dame, USA) *
Carlos Bertulani (TA&M, USA)
Carlos Granja (Advacam, Czech Republic)
Carolina Rabin (FCIEN, Uruguay)
Daniel Tapia (Kansas, USA) *
Debora Menezes (UFSC, Brazil)
Diego Torres (UNAL, Colombia)
Filomena Nunes (Michigan, USA) *
Iván Padrón (JINR, Russia)
Jorge López (UTEP, USA)
Jorge Piekarewicz (FSU, USA)
Leah Broussard (ORNL, USA)
Libertad Barón-Palos (UNAM, México)
Maria Ester Brandán (UNAM, México)
María José García Borge (CSIC, Spain)
Neelima Kelkar (U. de los Andes, Colombia)
Oscar Naviliat Cuncic (MSU, USA) *
Osvaldo Civitarese (La Plata, Argentina)
Rafael Correa (UTEM, Chile)
Ricardo Alarcón (ASU, USA) *
Rodolfo Id Betan (Rosário, Argentina)
Silvia Lenzi (UNIPD, Italy)

* Not confirmed

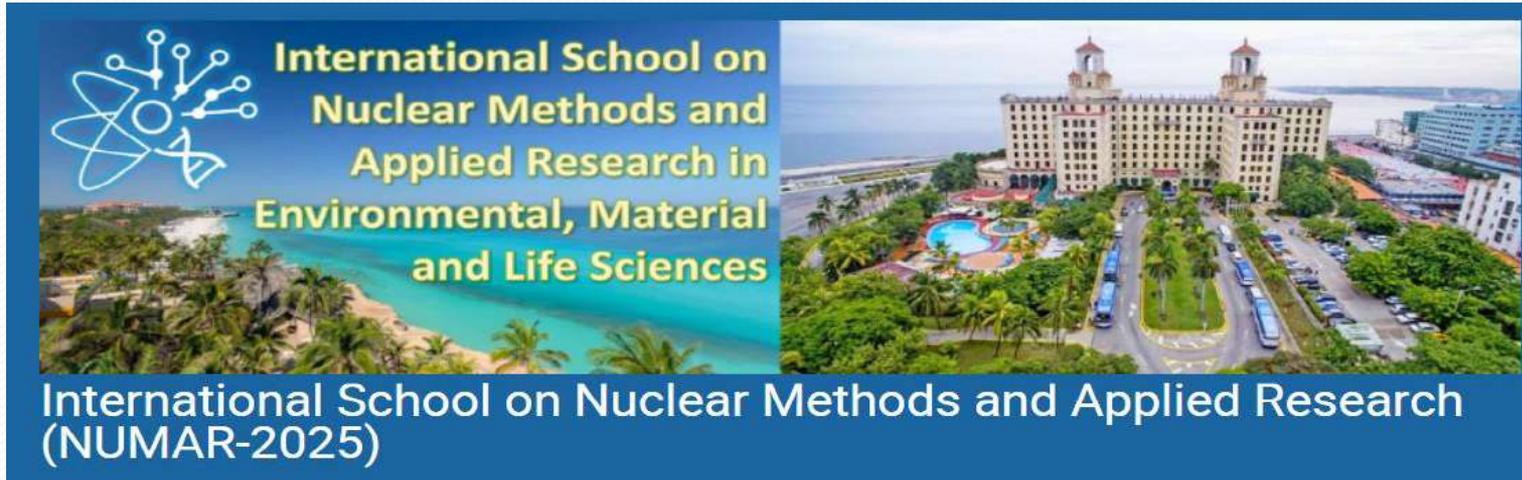
Liaison Committee

Leandro R. Gasques USP, Brazil
Leticia Palhares (UERJ, Brazil)
Marcelo Munhoz (USP, Brazil)
Marcilei A. Guazzelli (FEI Brazil)
Nilberto H. Medina (USP, Brazil)
Roberto Linares (UFF, Brazil)

Scientific Committee

Fred Genezini (IPEN, Brazil)
Leandro R. Gasques USP, Brazil
Leticia Palhares (UERJ, Brazil)
Marcelo Munhoz (USP, Brazil)
Marcilei A. Guazzelli (FEI Brazil)
Nilberto H. Medina (USP, Brazil)
Roelof Bijker (UNAM, Mexico)

RECENT EVENTS



INTERNATIONAL SCHOOL ON **NUCLEAR METHODS AND APPLIED RESEARCH** IN ENVIRONMENTAL, MATERIAL AND LIFE SCIENCES (**NUMAR-2025**)

Organizers:

- **JOINT INSTITUTE FOR NUCLEAR RESEARCH (JINR)**
- **AGENCY OF NUCLEAR ENERGY AND ADVANCED TECHNOLOGIES (AENTA)**

Date: February 24-27, 2025

Location: Hotel Nacional de Cuba, La Habana, Cuba



Subject Fields: Nuclear and related techniques for the life sciences, environmental studies and materials science.

Subfields: radiation biology; neuroscience; radiation medicine: radioisotopes and hadron therapy, radiation detectors and medical imaging; nanostructures and functional materials for medical and environmental applications; structural biophysics; radioecology; air, water, and soil pollution; technology of water purification; nuclear technologies for geology, paleontology, archaeology, seismology; modern information technologies for computations and automated data processing for biology, medicine, agriculture and environmental studies.

This year, **36** students and young specialists representing scientific and educational organizations of **Brazil, Costa Rica, Cuba, Dominican Republic, Mexico, and Paraguay** participated in the school.

In this 2nd Edition of the School the lectures were given by 8 JINR specialists and 6 other representatives from **Argentina, Brazil, Cuba, Mexico and South Africa.**



22nd edition of the Summer School on Theoretical Nuclear Physics

April, 28th to May, 2nd, 2025

4 short courses and 10 seminars - 50 participants

- A Modern Description of Dense Matter
- Hot and Dense QCD in Colliders
- Effective Field Theories
- Nuclear Reactions Models



XXII Escola de Verão Jorge André Swieca de Física Nuclear Teórica
28 de Abril a 02 de Maio, 2025
Niterói - RJ

INÍCIO PROGRAMAÇÃO INSCRIÇÃO RESUMOS TÓPICOS DATAS HOSPEDAGEM ÁREA DO PARTICIPANTE

XXII Escola de Verão Jorge André Swieca de Física Nuclear Teórica

A Escola de Verão Jorge André Swieca de Física Nuclear Teórica 2025 é a 22ª edição desta tradicional escola bianual e que será realizada em Niterói, RJ, entre os dias 28 de Abril e 02 de Maio 2025 nas dependências da Universidade Federal Fluminense.

Esta escola tem como público alvo os estudantes de pós-graduação. Todavia, alunos de iniciação científica trabalhando em algum tópico de física nuclear, bem como os pesquisadores que possuam interesse nos assuntos abordados também são muito bem-vindos.

A Escola contará com 4 cursos avançados (CA) e seminários que complementarão os tópicos dos CAs. Haverá também uma seção dedicada aos painéis dos trabalhos dos participantes e uma seção de "flash talks" a serem apresentados por estudantes selecionados no evento.

Comitê Organizador:

Magno Valério Trindade Machado (UFRGS)
Patricia Camargo Magalhães (Unicamp)
Ricardo Sonogo Farias (UFSC) - Coordenador
Roberto Linares (UFF)
Varese Salvador Timóteo (Unicamp)

> Código de Conduta (SBF)

> Instruções para Organizadores

> Contatos

REALIZAÇÃO



APOIO



Upcoming Events



The Particle Therapy CoOperative Group (PTCOG)

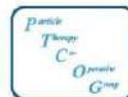
<https://ptcog63.org/>

**63rd ANNUAL PTCOG
CONFERENCE**

**2 - 7 JUNE 2025
BUENOS AIRES, ARGENTINA**



| ptcog63.org
| #PTCOG63



UPCOMING EVENTS



**23rd School on Fundamental Interactions
(estimated: 80 participants)**

August, 2025



SOCIEDADE BRASILEIRA DE FÍSICA

**Spring Meeting (Nuclear, Particle and Fields)
estimated: 300 participants**

September, 2025

<https://www1.fisica.org.br/~evjaspc/xxiii/index.php/pt/>

<https://www1.fisica.org.br/~epsbf/v/index.php/pt/>

**XXIII Escola de Verão
Jorge André Swieca
de Partículas e Campos
04 a 08 de agosto de 2025**

HOME PROGRAMA INSCRIÇÃO RESUMOS DATAS ÁREA DO PARTICIPANTE

XXIII Escola de Verão Jorge André Swieca de Partículas e Campos

04 a 08 de agosto, Rio de Janeiro, RJ - CBPF

A Escola de Verão Jorge André Swieca de Partículas e Campos é um dos eventos tradicionalmente organizados pela Sociedade Brasileira de Física, reunindo cerca de 100 estudantes a cada dois anos. Em 2025, a escola será realizada presencialmente no Centro Brasileiro de Pesquisas Físicas (CBPF) no Rio de Janeiro, de 4 a 8 de agosto. Esperamos ansiosamente pelo nosso encontro no Rio de Janeiro!

The Jorge André Swieca Summer School in Particles and Fields is a long-standing, traditional event organized by the Brazilian Physical Society, gathering around 100 students every 2 years. In 2025, the school will be held in person and the venue is the Centro Brasileiro de Pesquisas Físicas (CBPF) in Rio de Janeiro, from August 04 to August 08. We look forward to meeting you in Rio de Janeiro!

Comitê Organizador

Andre Azevedo Nepomuceno (UFF)
Carolina Loureiro Benone (UFPA)
Gilvan Augusto Alves (CBPF)
Murilo Santana Rangel (UFRJ) - chair
Tereza Cristina da Rocha Mendes (USP)

> Código de Conduta (SBF)

> Instruções para Organizadores

> Contatos

REALIZAÇÃO



SOCIEDADE BRASILEIRA DE FÍSICA

INÍCIO PALESTRANTES INSCRIÇÃO RESUMOS DATAS PROGRAMA PROVISÓRIO CONTATO ÁREA DO PARTICIPANTE



Inicio

V Encontro de Primavera da SBF - EPSBF 2025

Caros colegas,

O V Encontro de Primavera da SBF de 2025 (V EPSBF), que unifica a XLVI Reunião de Trabalho sobre Física Nuclear no Brasil (RTFNB) e o XLIII Encontro Nacional de Física de Partículas e Campos (ENFPC), ocorrerá na semana de 30 de setembro a 03 de outubro de 2025, no campus da UFMA, em São Luís - MA. Campus de São Luís, no auditório do Centro Paulo Freire e Centro de Convenções da UFMA.

O evento oferece um ambiente propício para a integração dos pesquisadores que atuam no Brasil e no exterior, divulgação dos avanços recentes, tanto no campo teórico quanto experimental e suas potenciais aplicações nas pesquisas multidisciplinares. Na edição 2025, ocorre pela primeira vez no estado do Maranhão.

Comissão Organizadora

- Dionísio Bazela Filho (UFPA)
- Manoel Messias Ferreira Jr. (UFMA) - Coord. Geral
- Márcia de Almeida Rizzuto (USP)

PT

> Código de Conduta (SBF)

> Instruções para Organizadores

> Chamada para participação em auxílio coletivo FAPESP

> Hotel

REALIZAÇÃO



SOCIEDADE BRASILEIRA DE FÍSICA



Very brief information about
Latinamerican research on
Nuclear Physics and Applications

Argentina



Studied topics

La Plata

- Nuclear structure models applied to double charge exchange reactions.
- Electroweak processes in nuclei: double beta decay without neutrinos
- conversion of muons into electrons and muon capture.
- Nuclear astrophysics and Axion physics.

Tandar Laboratory, Buenos Aires

- Studies of angular distributions of experimental and theoretical nuclear reactions and structure.
- Soil dating by low background gamma spectrometry
- In vitro Protontherapy trials in the Tandar Accelerator.
- Diagnosis of industrial processes using nuclear techniques.
- Microscopic alpha decay calculation in drip line nuclei.

Rosario

Effects of pairing of nuclei with excess neutrons.

Correlations of four neutrons in exotic nuclei.

Members: La Plata: 4, Tandar Lab. Buenos Aires: 15; Rosario: 3

International collaborations

La Plata: Dubna Laboratory, Russia. Univ. of Jyvaskyla, Finland. University of Prague, Czechia.

Univ. Valladolid, Spain.

Lab. Tandar: Univ. Fluminense, Brazil. University of Sao Paulo, Brazil. Univ. of Seville, Spain.

Rosario: Michigan State University, USA. Lamar University, USA. Stockholm University, Sweden.

Brazil



Brazilian Physical Society

Nuclear Physicists in Brazil

Experimental Physicists = 415

Theoretical Physicists = 317

Industrial = 98

Professors = 375



431 members with PhD

Female 23% and Male 77%

Research Programs

Nuclear structure and reactions

Nuclear and particle astrophysics

Fundamental symmetries and neutrino properties

Relativistic heavy ion collisions (ALICE and ATLAS)

Hadron Structure and Phases of Nuclear matter

Nuclear Instrumentation

Applications : Medial Physics, Art/Archeology, Energy, and Space

etc.



**40 Institutions, 205 Researchers, 55 Postdocs,
103 PhD Students, 75 Master's Students, and 42 undergrad. students.**

Research areas: **Low- and High-Energy Nuclear Physics and Applications**

Laboratories:

UFF, RJ - Laboratório de Radiocarbono - 250 kV NEC accelerator isotopic ratio $^{14}\text{C}/^{13}\text{C}$, $^{14}\text{C}/^{12}\text{C}$

UFF, RJ - Laboratório de Radioecologia e Alterações Ambientais (LARA)

UESC and UFBA, Bahia.

UFSC, Florianópolis, Santa Catarina.

FEI, São Bernardo do Campo, São Paulo. Laboratório de Física das Radiações (LAFIR)

FEI, São Bernardo do Campo, São Paulo. Laboratório de Efeitos da Radiação Ionizante (LERI)

UEL, Paraná - Laboratório de Física Nuclear Aplicada (LFNA)

UNICID/UNICSUL - Laboratório de Física Teórica e Computacional (LFTC)

ITA, São José dos Campos. Laboratório de Monitoração de Radiação Nuclear Atmosférica (ATMOSRAD)

USP, São Paulo, Centro de Instrumentação Nuclear (CIN)

USP, São Paulo, Laboratório de Análise de Materiais por feixes iônicos (LAMFI)

USP, São Paulo, Laboratório Aberto de Física Nuclear e Aplicações (LAFNA)

USP, São Paulo, Laboratório de Arqueometria e Ciências Aplicadas ao Patrimônio Cultural (LACAPC)

Institutions:

CBPF, CNEN, EEL-USP, FEI-SBC, FURG, IF-UERJ, IF-UFF, IF-UFRJ, IF-USP, ITA, UNICENTRO, UEL, FAT-UERJ, UESB, UESC, UFABC, UFBA, UFPB, UFPel, UFRGS, UFSC, UNESP, IF-UNICAMP, UNICSUL/UCS, UNIFAP, UFSB, U.P. Mackenzie, IFSC-USP, UNIFAL, UFSM, UFRN, IIF-UFRN, UFAC, UFT, CEFET-RJ, FMB-UNESP, IBB-UNESP, IFT-UNESP, IEA-USP, FT-UNICAMP, UFFS, UFG

Cuba



Havana University (UH)

Instituto Superior de Tecnologías y Ciencias Aplicadas (InSTEC)),

112 students of Nuclear Physics

88 students of Nuclear and Energetic Engineering

85 students of Radiochemistry

Nuclear Physics Department

- Geoavailability and speciation of rare earth elements in sediment samples for therapeutic use.
- Inorganic and radiological characterization of sandy beaches
- Environmental interest using nuclear and related techniques.
- Role of subnucleonic degrees of freedom in nuclear processes
- Analytical Nuclear Laboratory

Colombia

Basic Research Activities - Groups



1. Universidad Nacional de Colombia - UNAL

- Nuclear and Elementary Particle Physics Group:
<https://ciencias.bogota.unal.edu.co/departamentos/fisica/>
- Medical Physics Group:
<https://ciencias.medicas.bogota.unal.edu.co/>
- Grupo de Física Nuclear de la UNAL
<http://www.gfnun.unal.edu.co>



2. University of Atlántico

Applied Physics and Energy
Research Group (GIFA)



<https://www.uniatlantico.edu.co/uatlantico/facultades/ciencias-basicas/fisica>

3. University of Antioquia (UdeA)

- Nuclear Physics and Radioactivity Group:
Department (<http://fisica.udea.edu.co/>)
- Center for Nuclear Research (CIN):

<https://www.udea.edu.co/wps/portal/udea/web/inicio/investigacion/centros-institutos/nucleares/>



4. University of the Andes

Experimental High-Energy
Physics and Radiation Group

<https://fisica.uniandes.edu.co/>

Particle Physics Group:

<https://fisica.uniandes.edu.co/experimentos/altas-energias/>



5. Corporación de Ciencia y Tecnología
para el Desarrollo de la
Industria Naval, Marítima
y Fluvial

<https://www.cotecmar.com/>



6. Colombian Geological Survey (SGC)

<https://www.sgc.gov.co/>



Mexico



Sociedad Mexicana de Física

5 Different Divisions

- Nuclear Physics
- Radiation Physics
- Medical Physics
- Cosmic Rays
- Particles and Fields



Research Programs

- Nuclear structure and reactions
- Nuclear astrophysics
- Fundamental symmetries and neutrons
- Relativistic heavy ion collisions
- Hadronic physics
- Dark matter
- Instrumentation for nuclear and hadronic physics
- Atomic Mass Spectrometry
- Applications
- Medical physics

Uruguay



Today academic development is mainly related to applications in medicine.

Faculty of Sciences

Medical Physics Department

1 full professor, 3 associate professors, and 1 assistant professor.

Students in the Positron Emission Tomography area.

<http://medicanew.fisica.edu.uy/>



Venezuela



Institute of Scientific Research (IVIC)

Currently, the RV1 reactor has been inactive for many years. The core was dismantled, and the remaining uranium was sent to the USA. Below the reactor building, there is a unit called PEGAMA that performs material sterilization using ^{60}Co pellets.

There is also a secondary radiation measurement department that offers courses on radiological protection. IVIC currently enjoys support from the Ministry of Science and Technology. There is a plan to create a Science University, which would include a Nuclear Engineering program.

Nuclear Physics Laboratory at the Simón Bolívar University (LFN-USB)

The laboratory remains active but with significant difficulties due to the country's deteriorating situation.

Low-level radiation measurements and monitor radiation, as well as other atomic techniques such as X-ray fluorescence or X-ray diffraction, dedicated to research or testing samples sent by institutions or private companies for chemical composition or radioactivity content, mainly for export purposes.

Public lectures on nuclear energy are given, and a Master's program in Nuclear Engineering has been proposed to the USB authorities. Postgraduate courses on Nuclear Physics and Nuclear Reactors are still part of the curriculum in the Physics Department.

Lagoinha Beach,
Ceará, Brazil

*Thank you for
your attention*