



**IX Latin American Symposium
on
Nuclear Physics and Applications**

Escuela Politécnica Nacional
Quito, Ecuador, July 18-22, 2011
www.lasnpa-quito2011.org

SCIENTIFIC PROGRAM

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IX Latin American Symposium on Nuclear Physics and Applications Scientific Program Overview

	MORNING	AFTERNOON
MONDAY, July 18	Plenary 1 (Auditorio)	Plenary 2 (Auditorio)
TUESDAY, July 19	Plenary 3 (Auditorio)	Parallel A1 (Auditorio), A2 (Aula 1), A3 (Aula2)
WEDNESDAY, July 20	Plenary 4 (Auditorio)	Parallel B1 (Auditorio), B2 (Aula 1), B3 (Aula2)
THURSDAY, July 21	Plenary 5 (Auditorio)	Parallel C1 (Auditorio), C2 (Aula 1), C3 (Aula2)
FRIDAY, July 22	Plenary 6 (Auditorio)	Plenary 7 (Auditorio)

Plenary 1: Applications of Nuclear Physics

(Bradley, Pinsky, Santos, Martisikova, Jakubek)

Plenary 2: Low Energy Reactions and Nuclear Structure

(Casten, Gomes, Tabor, Hinde, Bruce)

Plenary 3: Nuclear and Particle Astrophysics

(Wiescher, Barros, Tain, Gasques, Lepine-Szily)

Plenary 4: Hadron Structure and Phases of Nuclear Matter

(Schaefer, Bijker, Maas, Menchaca, Surrow, Carrera)

Plenary 5: Fundamental Symmetries and Physics beyond the Standard Model

(Garcia, Civitarese, Pocanic, Naviliat-Cuncic, McKeown)

Plenary 6: Nuclear Structure, Nuclear Reactions, and Exotic Nuclei

(Lichtenthaler, Padilla-Rodal, Dasgupta, Gade, Andreoiu)

Plenary 7: Nuclear Energy after Fukushima, ALANFA Town Meeting, and Posters

(Greaves, Tarifeno-Saldivia, Alarcon, Granja)

Parallel A1: Nuclear Structure and Reactions I

(Figuera, Martel, Pierroutsakou, Pires Kelly, Arellano, Pampa, Heinman)

Parallel A2: Advances in Nuclear Instrumentation and Facilities

(Roblin, Macario, Granja, Ribas, Silveira, Tarifeno-Saldivia, Viesti)

Parallel A3: Hadron Structure and QCD Nuclear Physics I

(Baghdasaryan, Mulhauser, Alarcon, Lee, Hakobyan)

Parallel B1: Nuclear Structure and Reactions II

(Clark, Podolyak, Danielewicz, Varese, Medina, Gulshani)

Parallel B2: Applications of Nuclear Physics I

(Rahman, Ayala, Brandan, Caicedo, Kreiner, Mulhauser)

Parallel B3: Hadron Structure and QCD Nuclear Physics II

(Pena, Wu, Cole, Djalali, Martinez, Paolone)

Parallel C1: Nuclear Structure and Reactions III

(Ferreira, Marti, Rubio, Assuncao, Id Betan, Hadizadeh, Pinzon)

Parallel C2: Applications of Nuclear Physics II

(Cristancho, Gonzalez, Sajo-Bohus, Cole, Correa, Rodriguez, Viesti)

Parallel C3: Tests of Fundamental Symmetries

(Djalali, Leckey, Opper, Salas)

Poster Sessions: Posters will be on **permanent display from Tuesday afternoon** (Aula 5). Judging takes place during a 4-5 PM session open to all on Friday afternoon.

MONDAY MORNING, JULY 18

8:00 REGISTRATION

PLENARY 1: Applications of Nuclear Physics

Chair: Maria Ester Brandan

9:00 Inaugural Ceremony

9:20 Applications of condensed matter understanding to medical tissues and disease progression: Elemental analysis and structural integrity of tissue scaffolds
David Bradley (University of Surrey, UK)

9:55 Understanding the Space Radiation Environment
Lawrence Pinsky (University of Houston)

10:30 Coffee Break

10:50 Beyond archaeology: ^{14}C -AMS and the global carbon cycle
Guaciara dos Santos (University of California-Irvine)

11:25 Two dimensional silicon-based detectors for ion beam therapy
Maria Martisikova (German Cancer Research Center, Heidelberg, Germany)

12:00 Radiation Imaging with Pixel Detectors
Jan Jakubek (Czech Technical University, Prague)

12:35 End of Session

12:45 Lunch @ EPN

MONDAY AFTERNOON, JULY 18

PLENARY 2: Low Energy Reactions and Nuclear Structure

Chair: Nilberto Medina

14:35 Simple patterns and symmetries in nuclei: Macroscopic and microscopic aspects
Rick Casten (Yale University)

15:10 Systematic Results on Reactions and Scattering with Weakly Bound Nuclei at Near Barrier Energies
Paulo Gomes (Universidade Federal Fluminense, Brazil)

15:45 Testing the Standard Model of Nuclear Physics
Samuel Tabor (Florida State University)

16:20 Coffee Break

Chair: Samuel Tabor

16:50 Insights into Quasifission Dynamics from Mass-Angle Distribution Measurements
David Hinde (Australian National University)

17:25 Recent results from the RISING stopped-beam collaboration at GSI
Alison Bruce (Brighton University, UK)

18:00 End of Session

Special Program to honor Professor Eduardo D. Graves

Cocktail Reception @ EPN

TUESDAY MORNING, JULY 19

PLENARY 3: Nuclear and Particle Astrophysics

Chair: Chaden Djalali

- 9:00 Nuclear Astrophysics Underground
Michael Wiescher (University of Notre Dame)
- 9:35 The LAGO Collaboration: Searching for high energy GRB emissions in Latin America
Haydn Barros (Universidad Simón Bolívar, Venezuela)
- 10:10 Beta decay studies of neutron rich nuclei for astrophysics and nuclear technology
Jose Tain Enriquez (Instituto de Fisica Corpuscular, Valencia)
- 10:45 Coffee Break
- 11:15 Alpha-alpha interaction reexamined in the context of the Sao Paulo potential:
possible applications in astrophysics?
Leandro Gasques (Universidade de Sao Paulo)
- 11:50 Reactions with ^8Li at RIBRAS (Radioactive Ion Beams in Brasil): astrophysical and
nuclear structure applications
Alinka Lépine-Szily (Universidade de Sao Paulo)
- 12:25 End of Session
- 12:45 Lunch @ EPN

TUESDAY AFTERNOON, JULY 19

PARALLEL SESSIONS 14:30-18:30

- **A1: Nuclear Structure and Reactions I (Auditorio)**
- **A2: Advances in Nuclear Instrumentation and Facilities (Aula 1)**
- **A3: Hadron Structure and QCD Nuclear Physics I (Aula 2)**
- **POSTERS (Aula 5)**

TUESDAY AFTERNOON, JULY 19

PARALLEL A1: Nuclear Structure and Reactions I

Chair: Paulo Gomes

14:30 Collisions around the Coulomb barrier induced by halo and weakly bound nuclei: recent experimental results at INFN-LNS Catania
Pierpaolo Figuera (INFN-Laboratori Nazionali del Sud, Italy)

15:05 Reactions of halo nuclei at energies around the coulomb barrier
Ismael Martel (University of Huelva, Spain)

15:40 Collective modes: dynamical dipole excitation in dissipative heavy-ion reactions
Dimitra Pierroutsakou (INFN Section of Naples)

16:15 Study of the ${}^6\text{He}+{}^9\text{Be}$ elastic scattering at low energies
Cristina Pires Kelly (Universidade de São Paulo)

16:40 Coffee Break

Chair: David Hinde

17:00 The unabridged momentum-space optical model potential for nucleon-nucleus scattering with non-local density-dependent effective interactions
Hugo Arellano (University of Chile)

17:25 Spectroscopy of ${}^6\text{Be}$ by the ${}^3\text{He}({}^7\text{Be},\alpha){}^6\text{Be}$ reaction
Ruben Pampa Condori (Universidade de São Paulo)

17:50 Non-capture breakup in the ${}^{6,7}\text{Li} + {}^{144}\text{Sm}$ systems
Diego Heinman Martinez (Laboratorio Tandem, CNEA, Argentina)

18:15 End of Session

TUESDAY AFTERNOON, JULY 19

PARALLEL A2: Advances in Nuclear Instrumentation and Facilities

Chair: Haydn Barros

- 14:30 Recirculating Linear Accelerators for Future Muon Facilities
Yves Roblin (Jefferson Laboratory, USA)
- 14:55 Status of the ¹⁴C-AMS Laboratory in Brazil
Kita D. Macario (Universidade Federal Fluminense)
- 15:20 Neutron sources for test and calibration of neutron detectors for space applications
Carlos Granja (Czech Technical University, Prague)
- 15:45 Controlling Camac instrumentation trough the USB port
Roberto V. Ribas (Universidade de São Paulo, Brazil)
- 16:10 Leakage current and threshold voltage alteration due to X-rays and proton beam in nMOSFETs with different geometries
Marcilei A. Guazzelli da Silveira (Centro Univeristário da FEI, São Paulo, Brazil)
- 16:35 Coffee Break
- Chair:** Roberto Ribas
- 17:00 Behavior of low energy fast Plasma Focus devices as D-D fusion neutron sources
Ariel E. Tarifeño-Saldivia (Comisión Chilena de Energia Nuclear)
- 17:25 High rate read-out of scintillators with CAEN V-1720 FADC
Giuseppe Viesti (Università di Padova, Italy)
- 17:50 End of Session

TUESDAY AFTERNOON, JULY 19

PARALLEL A3: Hadron Structure and QCD Nuclear Physics I

Chair: Frank Maas

- 14:30 Preliminary Proton Spin Asymmetry results from SANE
Hovhannes A. Baghdasaryan (University of Virginia)
- 15:00 Proton Radius Puzzle
Françoise Mulhauser (University of Fribourg, Switzerland)
- 15:30 The OLYMPUS Experiment at DESY and the Proton Form Factor Puzzle
Ricardo Alarcon (Arizona State University)
- 16:00 Coffee Break @ 16:30
- Chair:** Thomas Schaefer
- 17:00 QCD phase transitions with dense matter in holographic QCD
Bum-Hoon Lee (Sogang University, Seoul, Korea)
- 17:30 Overview of hadronization data at CLAS (Jefferson Lab)
Hayk Hakobyan (Universidad Tecnica Federico Santa Maria, Chile)
- 18:00 End of Session

WEDNESDAY MORNING, JULY 20

PLENARY 4: Hadron Structure and Phases of Nuclear Matter

Chair: Phil Cole

- 9:00 Nearly perfect fluidity: from cold atoms to the quark gluon plasma at RHIC and the LHC
Thomas Schaefer (North Carolina State University)
- 9:35 Unquenched Quark Models
Roelof Bijker (Universidad Nacional Autónoma de México)
- 10:10 Strange Quarks in the Nucleon
Frank Maas (Helmholtz-Institut Mainz)
- 10:45 Coffee Break
- 11:05 Nuclei/anti-nuclei production in p-p and Pb-Pb at LHC energies
Arturo Menchaca (Universidad Nacional Autónoma de México)
- 11:40 Final results on the first W boson production at RHIC
Bernd Surrow (Massachusetts Institute of Technology)
- 12:15 Searching for a New Force of Nature with the CMS Detector
Edgar F. Carrera (Boston University)
- 12:50 End of Session
- 13:00 Lunch @ EPN

WEDNESDAY AFTERNOON, JULY 20

PARALLEL SESSIONS 14:30-18:30

- **B1: Nuclear Structure and Reactions II, Auditorio**
- **B2: Applications of Nuclear Physics I, Aula 1**
- **B3: Hadron Structure and QCD Nuclear Physics II, Aula 2**
- **POSTERS (Aula 5)**

WEDNESDAY AFTERNOON, JULY 20

PARALLEL B1: Nuclear Structure and Reactions II

Chair: Lidia Ferreira

- 14:30 Spectroscopy of the Heaviest Nuclei
Rod Clark (Lawrence Berkeley National Laboratory, USA)
- 15:05 Neutron-rich nuclei in the vicinity of the N=126 closed shell
Zsolt Podolyak (University of Surrey, UK)
- 15:40 Symmetry Energy from Systematic of Isobaric Analog States
Pawel Danielewicz (Michigan State University)
- 16:15 Power counting and renormalization group invariance in the NN system
Timoteo Varese (Universidade Estadual de Campinas)
- 16:40 Coffee Break
- Chair:** Alison Bruce
- 17:00 Nuclear Structure and Shell Model Description of the ^{37}Ar Nucleus
Nilberto Medina (Universidade de São Paulo)
- 17:25 A 2-D Algebraic Model for First 0^+ Excited States in Light Nuclei
Parviz Gulshani (NUTECH Services, Canada)
- 17:50 End of Session

WEDNESDAY AFTERNOON, JULY 20
PARALLEL B2: Applications of Nuclear Physics I

Chair: Jan Jakubek

14:30 The Potential of Doped Silica Telecommunication Fibre as a 1-D Detector for Radiation Therapy Dosimetry
A. T. Abdul Rahman (University of Surrey, UK)

15:00 A general cavity theory for photon beams
Edy A. Ayala (Escuela Politécnica Nacional, Ecuador)

15:30 Measurement and simulation of phase effects in radiological images of weakly-absorbing cylindrical objects
Maria Ester Brandan (Universidad Nacional Autónoma de México)

16:00 Biomedical Imaging with the Medipix2 semiconductor detector at UniAndes
Ivan Caicedo (Universidad de Los Andes, Bogotá, Colombia.)

16:30 Coffee Break

Chair: Maria Martisikova

17:00 Current Status of Accelerator-Based Boron Neutron Capture Therapy
Andres J. Kreiner (National Atomic Energy Commission of Argentina)

17:30 IAEA Activities on Accelerator and Research Reactor based Technologies and Applications
Françoise Mulhauser (IAEA, Vienna, Austria)

18:00 End of Session

WEDNESDAY AFTERNOON, JULY 20

PARALLEL B3: Hadron Structure and QCD Nuclear Physics II

Chair: Arturo Menchaca

- 14:30 Exploring a direct measurement of quark energy loss using semi-inclusive deep inelastic scattering
Cristian I. Peña (Universidad Tecnica Federico Santa Maria, Chile)
- 15:00 Pseudo-scalar vs. pseudo-vector coupling in eta-meson photoproduction from proton
Huachuan Wu (Universidad de Antioquia, Medellin, Colombia)
- 15:30 Photoproduction of phi-mesons at threshold using a beam of linearly polarized photons
Philip L. Cole (Idaho State University)
- 16:00 Absorption of the Omega and Phi Mesons in Nuclei
Chaden Djalali (University of South Carolina)
- 16:30 Coffee Break
- Chair:** Roelof Bijker
- 17:00 Polarization observables from the photoproduction of ω -mesons using Linearly Polarized Photons
Danny Martinez (Idaho State University)
- 17:30 Recent Studies of the Leptonic Decays of Photoproduced Vector and Pseudoscalar Mesons off of ^1H at Jefferson Lab
Michael Paolone (University of South Carolina)
- 18:00 End of Session

THURSDAY MORNING, JULY 21

PLENARY 5: Fundamental Symmetries and Tests of the Standard Model

Chair: Allena Opper

- 9:00 The forbidden pleasures of experimental physics
Alejandro Garcia (University of Washington)
- 9:35 Nuclear structure aspects of double beta decay and the neutrino mass
Oswaldo Civitarese (La Plata, Argentina)
- 10:10 Fundamental physics in rare pion and muon decays
Dinko Pocanic (University of Virginia)
- 10:45 Coffee Break
- 11:15 Precision correlation measurements in nuclear beta decay
Oscar Naviliat-Cuncic (Michigan State University)
- 11:50 Electro-weak physics at JLab
Bob McKeown (Jefferson Laboratory)
- 12:25 End of Session
- 12:45 Lunch @ EPN

THURSDAY AFTERNOON, JULY 21

PARALLEL SESSIONS 14:30-18:30

- **C1: Nuclear Structure and Reactions III, Auditorio**
- **C2: Applications of Nuclear Physics II, Aula 1**
- **C3: Tests of Fundamental Symmetries, Aula 2**
- **POSTERS (Aula 5)**

THURSDAY AFTERNOON, JULY 21

PARALLEL C1: Nuclear Structure and Reactions III

Chair: Pierpaolo Figuera

- 14:30 Theoretical studies of exotic drip-line nuclei
Lidia Ferreira (Instituto Superior Técnico, Lisboa, Portugal)
- 15:05 Elastic scattering of nuclear systems induced by weakly bound projectiles
Guillermo Marti (Laboratorio Tandem, CNEA, Argentina)
- 15:40 Decay Studies of $T_z = -1$ and -2 nuclei and the “isospin quasi selection rule”
Berta Rubio (Instituto de Física Corpuscular, Valencia, Spain)
- 16:15 Reaction rate by the non-extensive thermostatics
Marlete Assunção (Universidade Federal de São Paulo)
- 16:40 Coffee Break
- Chair:** Rod Clark
- 17:00 Complex-Energy Shell Model Description of Alpha Decay
Rodolfo Id Betan (Rosario Physics Institute, Argentina)
- 17:25 Universality and scaling limit of weakly-bound tetramers
Mohammad Hadizadeh (Universidade Estadual Paulista, Brazil)
- 17:50 A fitting function for experimental Energy Ordered Spectra in nuclear continuum studies
Javier Pinzon (Universidad Nacional de Colombia)
- 18:15 End of Session

THURSDAY AFTERNOON, JULY 21
PARALLEL C2: Applications of Nuclear Physics II

Chair: Andres Kreiner

14:30 Gamma-backscattering imaging: evaluating the size of circular and ellipsoidal objects

Fernando Cristancho (Universidad Nacional de Colombia)

15:00 Characterization of a gamma-backscattering imaging device

Natalia González (Universidad Nacional de Colombia)

15:30 Interpretation of the gamma-Compton densimeter response by analyzing multi-scattered photons

Laszlo Sajo-Bohus (Simón Bolívar University, Venezuela)

16:00 Photon Activation Analysis on Dust Particles

Philip L. Cole (Idaho State University)

16:30 Coffee Break

Chair: Fernando Cristancho

17:00 Detection of radioisotope ^{137}Cs in the Andes mountain of Santiago, Chile

Rafael Correa Devés (Universidad Tecnológica Metropolitana de Chile)

17:30 Measurement of ^{238}U , ^{232}Th and ^{40}K concentrations in different regions of Colombia

Wilmar Rodríguez (Universidad Nacional de Colombia)

18:00 Special Nuclear Material detection studies with the SMANDRA mobile system

Giuseppe Viesti (Università di Padova, Italy)

18:35 End of Session

THURSDAY AFTERNOON, JULY 21

PARALLEL C3: Tests of Fundamental Symmetries

Chair: Oscar Naviliat-Cuncic

- 14:30 The TREK program at J-PARC
Chaden Djalali (University of South Carolina)
- 15:00 Qweak - "A Search for New Physics" Status Update with Preliminary Results
John P. Leckey (College of William and Mary)
- 15:30 Limit on parity-violating neutron spin rotation in ^4He
Allena Opper (The George Washington University)
- 16:00 Characterization of large area and thick silicon detectors for neutron beta decay experiments
Americo Salas Bacci (University of Virginia, USA)
- 16:30 Coffee Break
- 17:00 End of Session

FRIDAY MORNING, JULY 22

PLENARY 6: Nuclear Structure, Nuclear Reactions, and Exotic Nuclei

Chair: Alison Bruce

- 9:00 Physics with Rare Ion Beams in Brazil
Rubens Lichtenthäler Filho (Universidade de Sao Paulo)
- 9:35 Electric quadrupole moments using the reorientation technique in
Coulomb excitation
Elizabeth Padilla-Rodal (Universidad Nacional Autónoma de México)
- 10:10 Time scales and mechanisms of break influencing fusion
Mahananda Dasgupta (Australian National University)
- 10:45 Coffee Break
- 11:15 Nuclear Structure of Exotic Nuclei from In-beam Nuclear Spectroscopy
Alexandra Gade (Michigan State University)
- 11:50 Radioactive Beam Experiments at TRUIMF
Corina Andreoiu (Simon Fraser University, Canada)
- 12:25 End of Session
- 12:30 Lunch @ EPN

FRIDAY AFTERNOON, JULY 22

PLENARY 7: Nuclear Energy after Fukushima; ALANFA Business Meeting; Posters

Chair: Laszlo Sajo-Bohus

- 14:00 The thorium molten salt reactor
Eduardo D. Greaves (Universidad Simón Bolívar, Venezuela)
- 14:30 Strengthening and motivating the teaching of physics and nuclear science in Chile
Ariel E. Tarifeño-Saldivia (Comisión Chilena de Energía Nuclear)
- 15:00 ALANFA Business Meeting
Ricardo Alarcon (Moderator)
- 16:00 Judging of Posters (in conjunction with coffee break)
Carlos Granja (Moderator)
- 17:00 ALANFA Business Meeting
Ricardo Alarcon (Moderator)
- 18:00 End of Session
- 20:00 Banquet @ La Ronda (Calle Belo Horizonte E8-45 y Diego de Almagro)