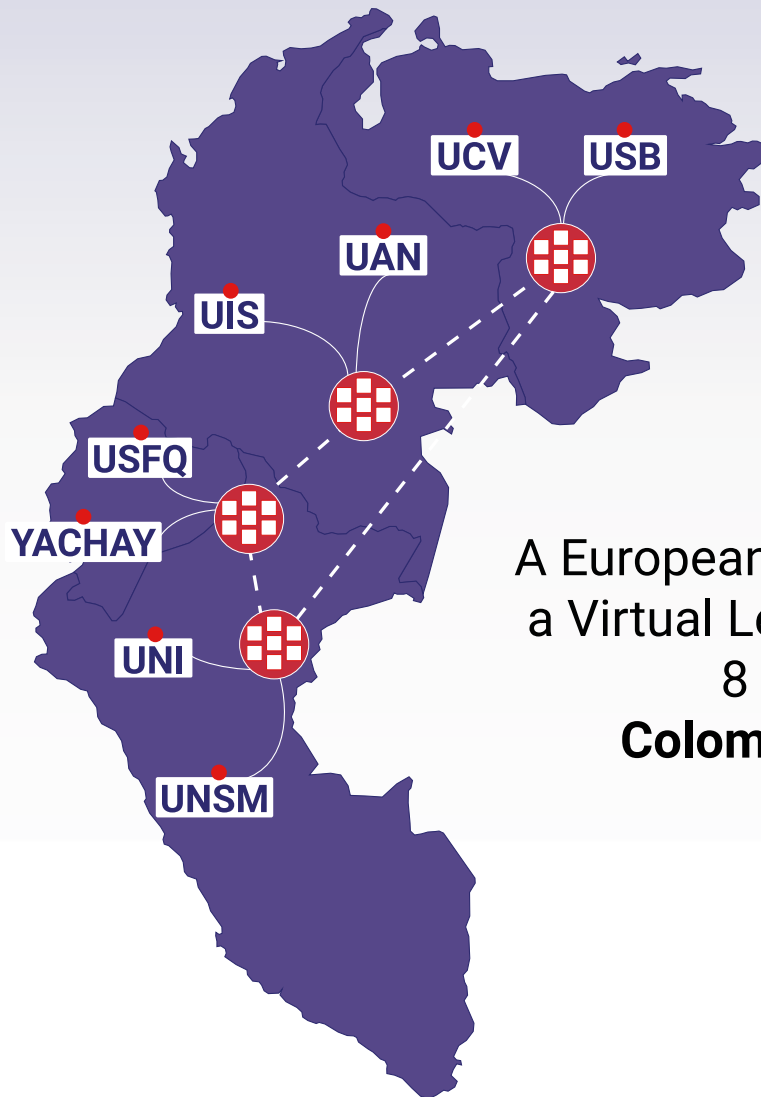


Academic program 2021
LA-CoNGA physics



Latin American alliance for
Capacity building in Advanced physics

LA-CoNGA physics



A European-Latin American partnership to develop
a Virtual Learning and Research Network through
8 master's courses in physics in
Colombia, Ecuador, Peru and Venezuela.

Data Science

Provides tools and concepts to address data processing and data analysis in order to make reproducible scientific inferences.

Software engineering for scientific research

Arturo Sánchez Pineda, Centre National de la Recherche Scientifique (CNRS-LAPP), France.

Juan C. Basto Pineda, Universidad Industrial de Santander, Colombia.

Introduction to Statistics

José Ocariz, Université de Paris, France.

Camila Rangel-Smith, The Alan Turing Institute, United Kingdom.

High Energy Physics Projects

Arturo Sánchez Pineda, Centre National de la Recherche Scientifique (CNRS-LAPP), France.

Javier Solano, Universidad Nacional de Ingeniería, Peru.

Complex System Projects in Molecular Dynamics

Ernesto Medina, Yachay Tech, Ecuador.

Scientific Instrumentation

Oriented to providing tools and concepts for the development and use of systems and interfaces in scientific instrumentation.

Introduction to measurement systems

Dennis Cazar, Universidad San Francisco de Quito, Ecuador.

Scientific Instrumentation

Reina Camacho Toro, Centre National de la Recherche Scientifique (CNRS), LPNHE, France.

Harold Yepes Ramírez, Yachay Tech, Ecuador.

Projects in High Energy Physics

Luis A. Núñez, Universidad Industrial de Santander Colombia.

Projects in Complex Systems

Mario Cosenza, Yachay Tech, Ecuador.

Theory

To understand the basic formalism of Field Theory, as well as its applications in High Energy Physics and Complex Systems Theory.

Introduction to Field Theory

José Ocariz, Université de Paris, France.

Anamaría Font, UCV, Venezuela y Albert-Einstein-Institut, Max-Planck-Institut für Gravitationsphysik, Germany.

Jorge Stephany, Universidad Simón Bolívar, Venezuela.

Field Theory and Statistical Mechanics (Complex Systems)

Pierre Pujol, Université Paul Sabatier, France.

Introduction to Particle Physics (High Energy Physics)

Gabriela Navarro, Universidad Antonio Nariño, Colombia.

José Antonio López, Universidad Central de Venezuela, Venezuela.

Specialized modules

Complex Systems: Advanced Statistical Mechanics

Coordinator: Ernesto Medina, Yachay Tech, Ecuador

Advanced Statistical Mechanics

Mario Cosenza, Yachay Tech, Ecuador.

Dynamics of critical phenomena

Ernesto Medina, Yachay Tech, Ecuador.

Projects - network simulation/epidemics

Orlando Álvarez, Universidad Católica de Cuenca, Ecuador.

Particle Physics: Astroparticles and Cosmology

Coordinator: Teófilo Vargas, UNMSM, Peru

Observational Cosmology

Clara Rojas, Yachay Tech, Ecuador.

Astroparticles

Miguel Mostafá, Penn State University, USA.

Patricia Hansen, Universidad Nacional de La Plata, Argentina.

Alberto Carramiñana, INAOE, Mexico.

Black Holes and Dark Matter

Javier García, Caltech, USA.

José Manuel Ramirez, Yachay Tech, Ecuador.

Valentina Montoya, Heidelberg University, Germany.

Neutrinos

Ignacio Taboada, Georgia Tech, USA.

Transversal modules

I-A Advanced Topics in Data Science: Scientific Reproducibility

Coordinator: Arturo Sánchez Pineda, LAPP-CNRS, France

Computational techniques and tools for the development and publication of data analysis pipelines

Arturo Sánchez Pineda, Centre National de la Recherche Scientifique (CNRS-LAPP), France.

Creation and use of Open Source tools for the replication of computational environments

Juan Carlos Basto, Universidad Industrial de Santander, Colombia.

Arturo Sánchez Pineda, Centre National de la Recherche Scientifique (LAPP-CNRS), France.

Machine Learning in Science

Gabriel Abellán, Universidad Central de Venezuela, Venezuela.

Machine Learning in Industry

Raúl Ramos Pollán, Universidad de Antioquia, Colombia.

Practical Exercises with ATLAS Open Data

Luis Pascual Domínguez, University of Tel-Aviv, Israel.

Hands-on Project

Juan Carlos Basto, Universidad Industrial de Santander, Colombia.

Arturo Sánchez Pineda, Centre National de la Recherche Scientifique (LAPP-CNRS), France.

I-B Medical Physics

Coordinators: José Antonio López, UCV, Venezuela, and Javier Solano, UNI, Peru

Introduction to simulation w/GEANT4

Francisco García, Helsinki Institute of Physics, Finland.

FM Nuclear Physics

Rafael Martín, Universidad Central de Venezuela, Venezuela.

Radiobiology

Roxana Gajardo, Universidad Central de Venezuela, Venezuela.

José Antonio López, Universidad Central de Venezuela, Venezuela.

Rafael Martín, Universidad Central de Venezuela, Venezuela.

Medical Imaging

Miguel Martín, Universidad Central de Venezuela, Venezuela.

Radiological Protection

Miguel Martín, Universidad Central de Venezuela, Venezuela.

Hands-on Project (GEANT4, Nuclear or Complex Systems)

Arturo Sánchez Pineda, Centre National de la Recherche Scientifique (CNRS-LAPP), France.

Francisco García, Helsinki Institute of Physics, Finland.

José Antonio López, Universidad Central de Venezuela, Venezuela.

Miguel Martín, Universidad Central de Venezuela, Venezuela.

Rafael Martín, Universidad Central de Venezuela, Venezuela.

Roxana Gajardo, Universidad Central de Venezuela, Venezuela.