LA-CoNGA physics

Latin American alliance for Capacity building in Advanced physics

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Scientific collaboration and education at a global scale

• In the current information era, science and higher education are rapidly becoming globally distributed, collaborative and multidisciplinary

• The university-research-society link is strengthen: knowledge generation, deployment application and transfer are taking place in the same physical and social context

• Virtual Research and Learning Networks (VRLN) play a key role

• A network of teachers and researchers to effectively work together on an infrastructure rich in information and communications technologies (ICT) where data, software tools, research facilities, teaching and information resources are seamlessly shared

https://www.irit.fr/netscity/prod/intro/
The importance of Virtual Research and Learning Networks

Three main objectives:

• Accessibility
  • Each institution/group in the VRLN might not have all the resources nor the staff critical mass needed but together they are stronger

• Modernization
  • Through the use of ICT and open educational resources, connectivity, acquisition of digital skills, use and development of new learning methods
  • All based in local capacity building for the sustainability of the projects

• Internationalization
  • Train new generations within a collaborative international environment
  • Increasing the diversity in STEM
HECAP context in the Latin American region

A very summarized/simplified overview:

• High energy, cosmology and astroparticle physics (HECAP) community/activities has undoubtedly grown in Latin America in the last decades

• A series of initiatives have contributed to it (non exhaustive list)
  • The Pierre Auger observatory in Argentina
  • HELEN and EPLANET programs
  • Several other national, bi-national or multinational projects

• In terms of human and research resources the HECAP development is nuanced and variable country-by-country (this impacts the training of the new generations)
  • Diversity of interests and skills developed (as we see in this forum!)
  • A young generation with much potential and eagerness to learn
  • Together we are stronger

• HEP is one of the thematic areas of LA-CoNGA physics (another one is complex systems)
• An Erasmus+ project co-funded by the European Commission’s Education, Audiovisual and Culture Executive Agency
  • Responding to the strategy of the participant institutions and to the capacity building in higher education strategy promoted by the EU
  • A 3-years project. Officially started in January 2020

• 11 universities from Latin-America and Europe join efforts with other scientific (CERN, CNRS, DESY, ICTP, IRFU) and industrial partners to contribute to the modernisation, accessibility and internationalisation of the higher education in Colombia, Ecuador, Peru and Venezuela

• A one year specialization in advanced physics, calibrated on the European curricular structure (i.e. 60 ECTS per year following the Bologna protocol), and integrated into the existing master programs of each of our 8 Latin American universities
LA-CoNGA physics: the consortium
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Scientific and industrial partners
High Energy Physics
- Answering fundamental questions about the universe
- International collaborations
- Knowledge transfer

Complex systems
- Study and classification of matter states
- Ubiquity of studied models
- Networks and collective behavior
- Highly interdisciplinary field
LA-CoNGA physics: three axis of competences

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LA-CoNGA physics

¡SUEÑA BIEN!
LA-CoNGA physics: methodology and platform

How do we want to do that:

- An e-learning platform open access
- Remote access to interconnected experimental facilities
- Problem solving oriented curriculum, distributed in small blocks
- Good practices of scientific reproducibility
- Mobility program in Latin America and Europe for academic and industrial interships
LA-CoNGA physics community is working to start the first courses in January 2021
LA-CoNGA physics: #HablemosLAConGA

• Officially launched two weeks ago with a serie of virtual sessions “Hablemos de Física Avanzada/ Let’s talk about advanced physics”
• Virtual sessions taking place every Friday for six weeks. Started on June 26th!
  • More than 200 attendees in the two first events
  • More info about the next sessions at: http://laconga.redclara.net/blog/
LA-CoNGA physics: our values/our vision

• We strengthen a sustainable, dynamic, collaborative, interconnected and diverse virtual research and learning network of Latin American and European researchers in advanced physics
• With close ties to the productive sector, which leads the development of science and technology in the region
• Contributing to the modernization, accessibility and internationalization of higher education systems in the region
• Using of technology in educational environments to enhance learning
• We envision similar experiences in other disciplines
Thanks!

Missing some of the community members in the picture! Invite you to check our launching video and our website to get more info about the project and the team!