

31st International Symposium on Lepton Photon Interactions at High Energies



Contribution ID: 13

Type: **Talk**

LA-CoNGA physics: an open science education collaboration between Latin America and Europe for High Energy Physics

Tuesday 18 July 2023 13:30 (15 minutes)

The communities of astrophysics, astronomers and high energy physicists have been pioneers in establishing Virtual Research and Learning Networks (VRLCs)[1] generating international productive consortiums in virtual research environments and forming the new generation of scientists. These environments are key to improve accessibility and inclusion for students and researchers in developing countries. In this talk we will discuss one in particular: LA-CoNGA Physics (Latin American alliance for Capacity building in Advance physics) [2].

LA-CoNGA physics aims to support the modernization of the university infrastructure and the pedagogical offer in advanced physics in four Latin American countries: Colombia, Ecuador, Peru and Venezuela. This virtual teaching and research network is composed of 3 partner universities in Europe and 8 in Latin America, high-level scientific partners (CEA, CERN, CNRS, DESY, ICTP), and several academic and industrial partners. The project is co-funded by the Education, Audiovisual and Culture Executive Agency (EACEA) of the European Commission.

Open Science education and Open Data are at the heart of our operations. In practice LA-CoNGA physics has created a set of postgraduate courses in Advanced Physics (high energy physics and complex systems) that are common and inter-institutional, supported by the installation of interconnected instrumentation laboratories and an open e-learning platform. This program is inserted as a specialization in the Physics masters of the 8 Latinamerican partners in Colombia, Ecuador, Peru and Venezuela. It is based on three pillars: courses in high energy physics theory/phenomenology, data science and instrumentation. The program is complemented by transversal activities like seminars, citizen science projects and open science hackathons [3].

In the current context, VRLCs and e-learning platforms are contributing to solve challenges, such as distance education during the COVID19 pandemic and internationalization of institutions in developing countries.

[1] <http://www.oecd.org/sti/inno/international-distributed-research-infrastructures.pdf>

[2] <http://laconga.redclara.net>

[3] <https://laconga.redclara.net/hackathon/>

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Session Classification: Diversity, Inclusion, Equity and Outreach

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