

LA-CoNGA physics



Cartagena 28 & 29 march 2022

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Latin American alliance for
Capacity building in Advanced physics
LA-CoNGA physics



Cofinanciado por el
programa Erasmus+
de la Unión Europea





Scientific collaboration and education at a global scale

Science and higher education
**globally distributed,
collaborative and
multidisciplinary**

**Virtual Research and
Learning Networks**
play a key role

University-research-society link
**knowledge generation,
application and transfer**

A network where **data, software tools,
research facilities, teaching and
information resources
are seamlessly shared**



Map of COVID 19 scientific collaboration indexed in the Scopus on the 7th of April 2020

Keywords : "COVID-19", "SARS-CoV-2", "2019-nCoV". 519 articles

Created with Netscity (<https://www.irit.fr/netscity/prod/>) by Marion Maisonneuve (UMR Géographie-cités - CNRS). JS map by amCharts.



The importance of virtual research and learning networks

Internationalization

collaborative international environment

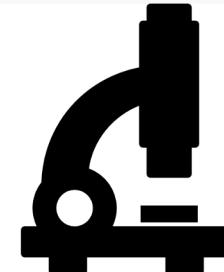
Accessibility



Each institution/group
might not have
all the resources/staff



Modernization

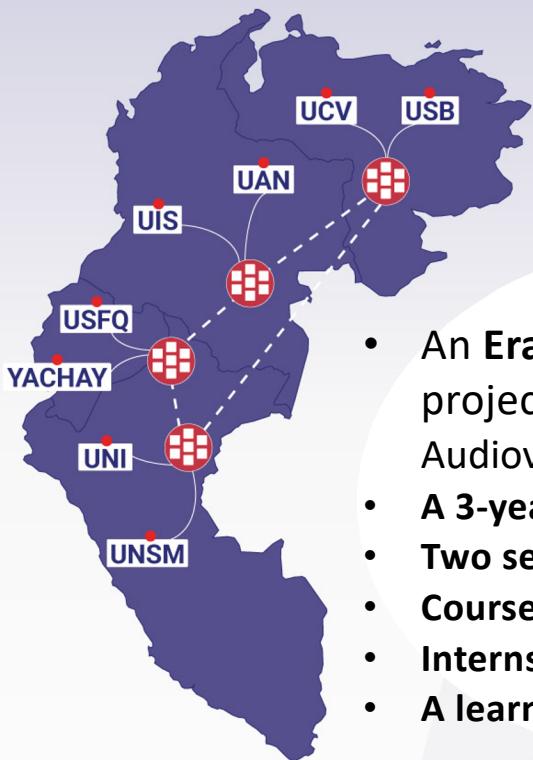


open educational resources,
connectivity, acquisition
of digital skills, and
use/development of new
learning methods

Sánchez, A., and Atlas Collaboration. "The CEVALE2VE case." PoS ICHEP2016 (2016) 322

Caicedo, M., et al. "Virtual research and learning communities in Latin America: The CEVALE2VE case." Interciencia 42.11 (2017): 733-738

Peña-Rodríguez, J., & Núñez, L. A.. "LA-CoNGA physics: an Open Science Collaboration in Advanced Physics between Latin-America and Europe". *arXiv:2201.02256*.



LA-CoNGA physics

<https://laconga.redclara.net/>



Erasmus+

- An Erasmus+CBHE (Capacity Building in Higher Education) project co-funded by the European Commission's Education, Audiovisual and Culture Executive Agency
- A 3-years project. Officially started in January 2020
- Two semesters corresponding to M2 EU Master
- Courses in Physics, Scientific Instrumentation and Data Science
- Internships in research labs and Industrial partners
- A learning community

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 higher education in Colombia, Ecuador, Perú and Venezuela



Universities and Scientific/Industrial Partners

Universities

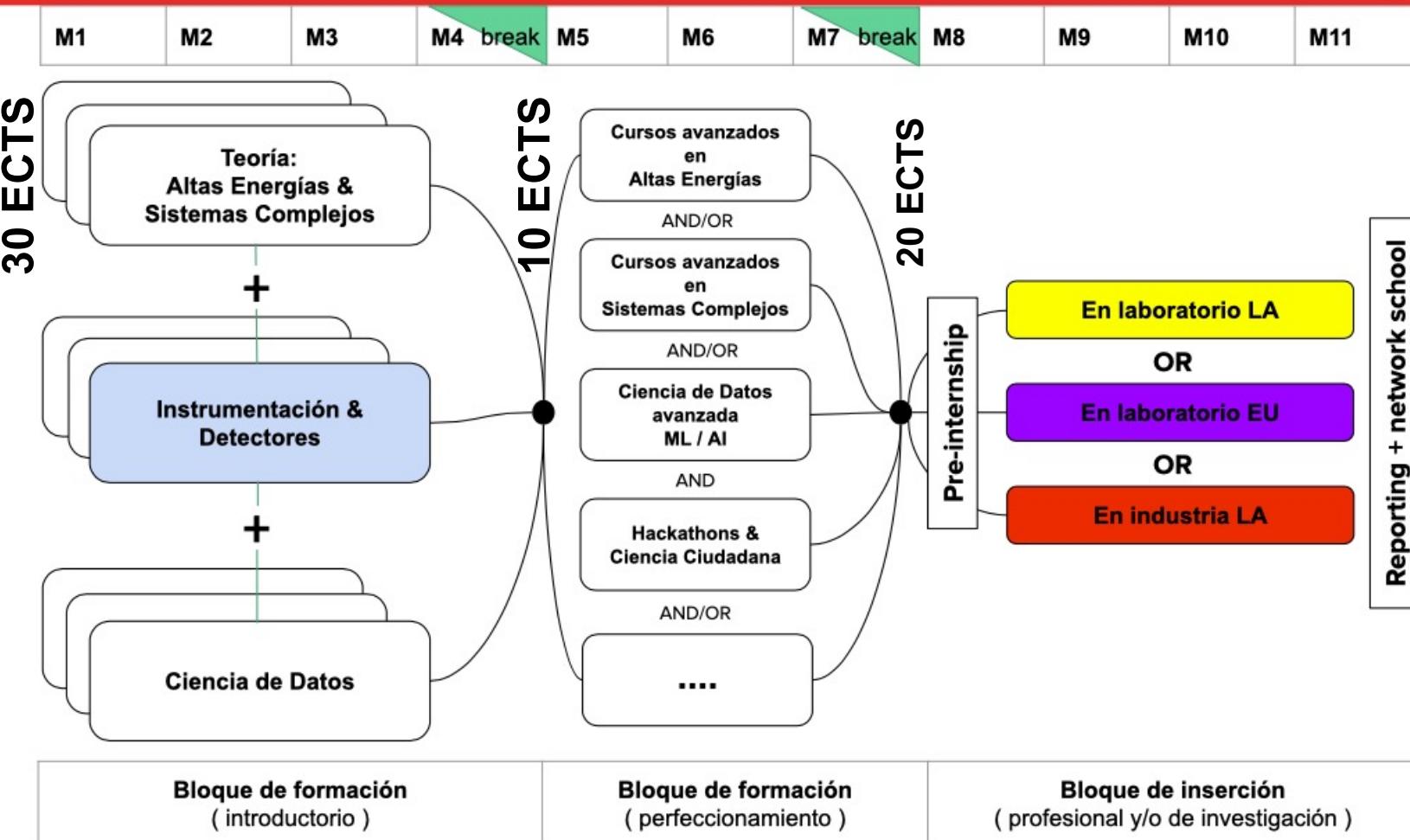


Scientific and Industrial partners



Nuestra CONGA

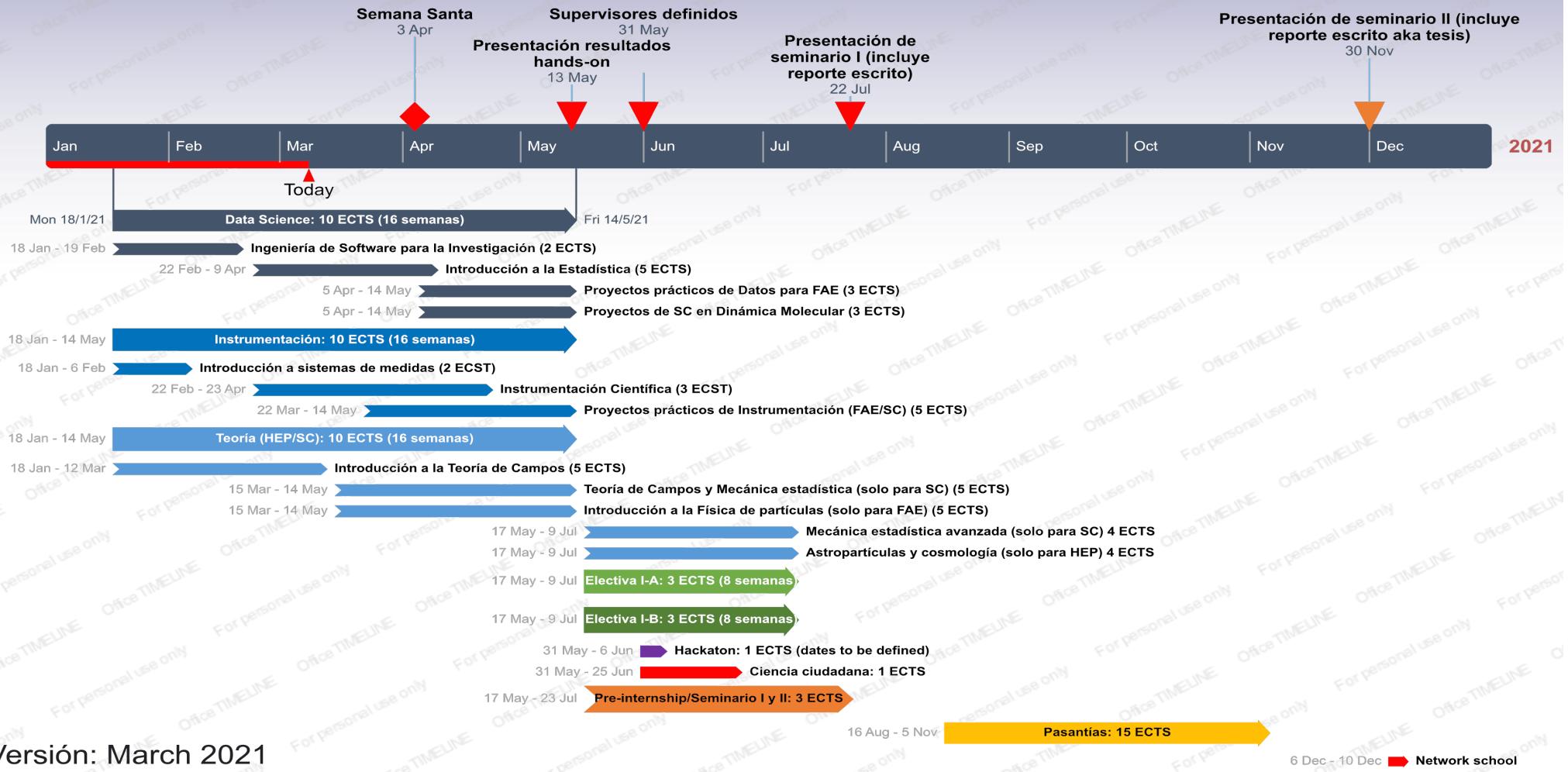
LA-CoNGA physics



<http://laconga.redclara.net/wp-content/uploads/2020/07/preguntas-frecuentes-LACoNGA.pdf>



Calendario y Actividades LA-CoNGA 2021

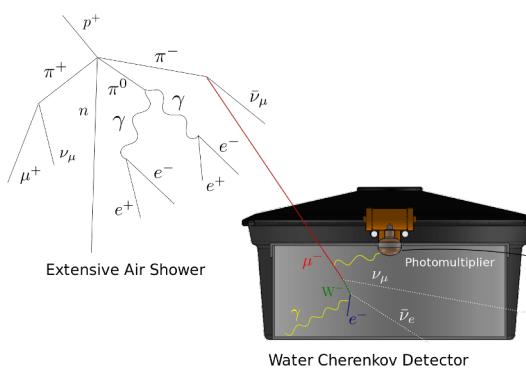


Versión: March 2021

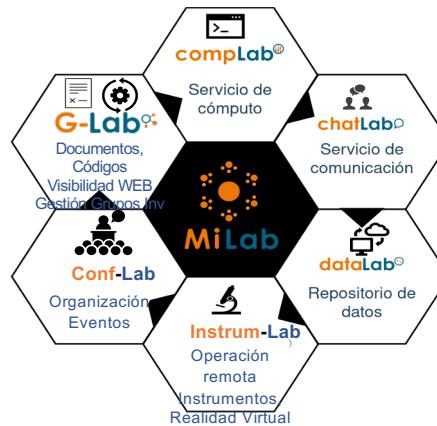


Community, Methodology and platform

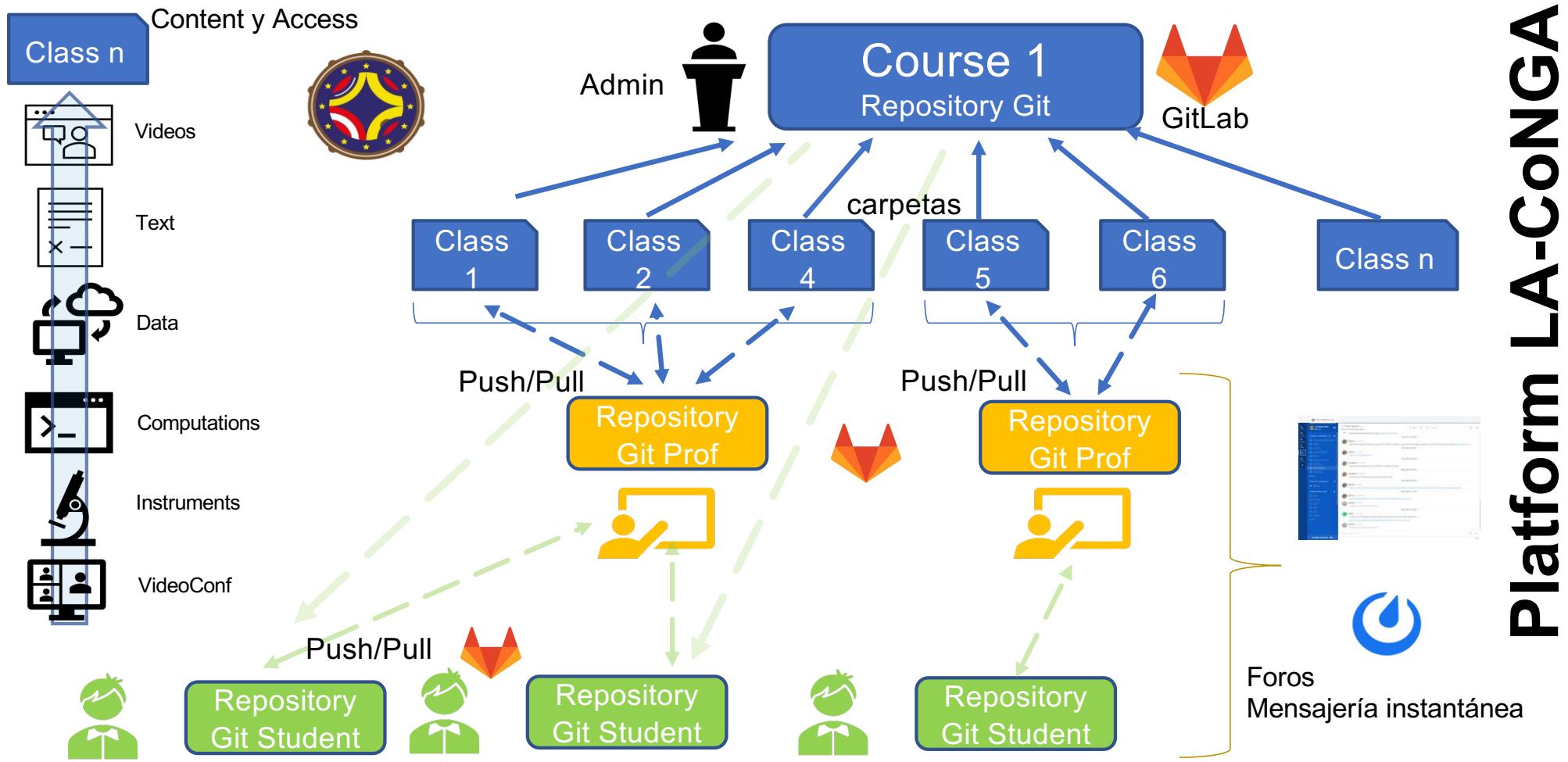
- .An e-learning open-access platform
 - .Good practices of scientific reproducibility
 - .Remote-access experimental facilities
 - .Spanish teaching material



- 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 régión
 - Contributing to the modernisation, accessibility and internationalisation of higher education systems in the régión
 - Using of technology in educational environments to enhance learning
 - Applying **good scientific practices** and **gender equality**
 - We envision similar experiences in other disciplines



Professional platform



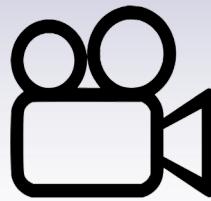


Remote labs

Biblio.



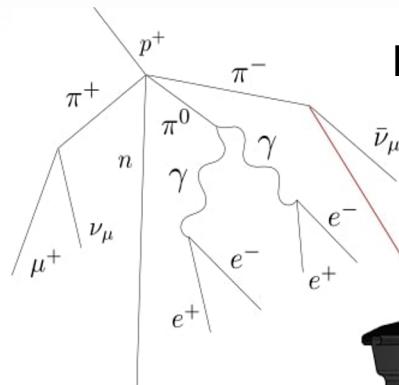
Demo



Control and data taking



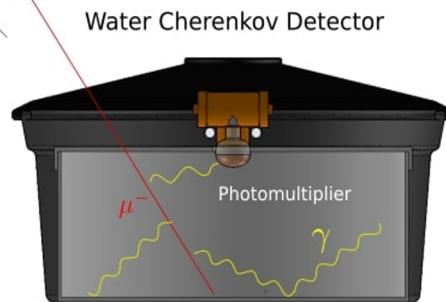
Communication



Extensive Air Shower



Remote detectors and instruments

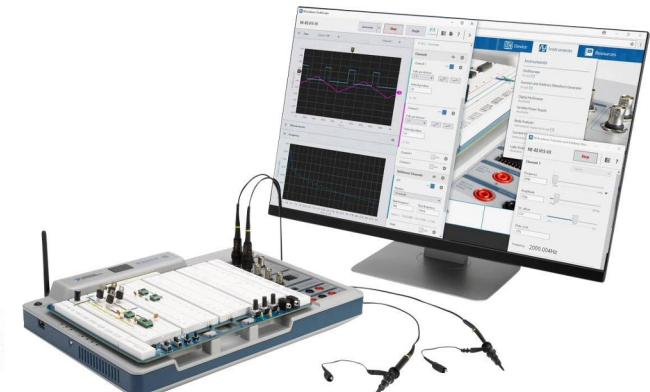


Water Cherenkov Detector

Photomultiplier



CAEN



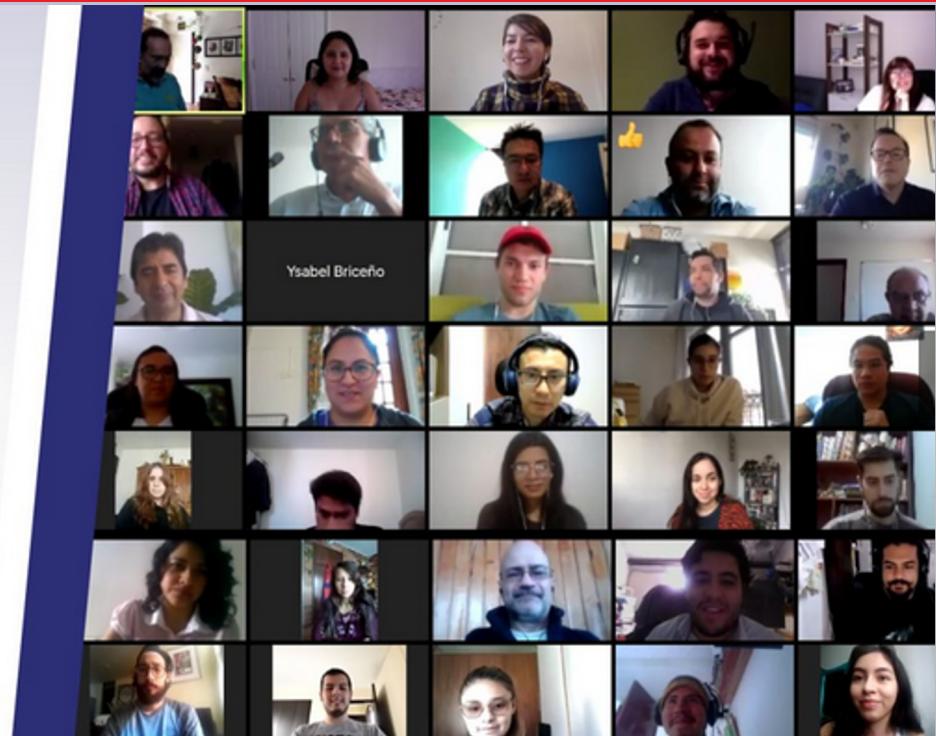
National Instruments

Thanks



Latin American alliance for
Capacity buildiNG in Advanced physics
LA-CoNGA physics

- ✓ Colaboración internacional
- ✓ Comunidad interconectada
- ✓ Presencialidad remota
- ✓ Impacto social
- ✓ Conocimiento abierto



2021 = 30 instructors ; 50 students in 4 countries ; 100 classes in Spanish

2022 = 70 students



<http://laconga.redclara.net>



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lacongaphysics



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