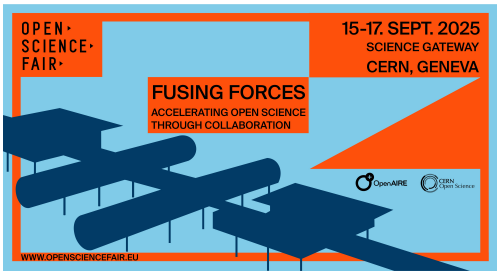

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LA-CoNGA and EL-BONGO physics: open science education collaborations between Latin America and Europe for advanced physics

Wednesday 17 September 2025 12:00 (30 minutes)

Communities in astrophysics, astronomy, and high-energy physics have pioneered Virtual Research and Learning Communities (VRLCs) that foster international cooperation, open education, and the development of new generations of scientists through accessible virtual environments. Building on this foundation, the LA-CoNGA Physics network (2020–2024) [1] established an European–Latin American collaboration to modernize advanced physics education and research infrastructure across multiple countries in Latin America and Europe.

LA-CoNGA physics united 11 universities and leading scientific institutions—including CERN, CEA, CNRS, DESY, ICTP and RedCLARA—offering a shared postgraduate curriculum in high-energy physics, data science, and instrumentation. It integrated interconnected laboratories and an open e-learning platform, embedding Open Science education and Open Data principles. The network enhanced inclusivity and resilience, notably addressing challenges such as remote learning during the COVID-19 pandemic, while fostering engagement through seminars, citizen science projects, and open science hackathons [2].

In 2025, the initiative evolved into EL-BONGO Physics [3], expanding the consortium by incorporating a few countries in Central American and broadening its scientific scope to include astroparticles and multi-messenger physics, geophysics, artificial intelligence, and computational physics, alongside high-energy physics. This expanded network deepens the European–Latin American partnership, driving further modernization and internationalization of higher education systems through cooperation, shared infrastructure, and open-access resources.

Together, LA-CoNGA and EL-BONGO exemplify how transcontinental VRLCs leverage open education, cutting-edge virtual tools, and global collaboration to transform physics education and research, fostering innovation, inclusion, and sustainable capacity-building across diverse scientific fields.

[1] http://laconga.redclara.net
[2] https://laconga.redclara.net/hackathon/
[3] https://elbongo.redclara.net

Keywords

Tagline

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