The CEVALE2VE case
outreach and diversity

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Centro Virtual de Altos Estudios en Altas Energías or Virtual Centre of Studies on High Energy Physics of Venezuela

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The Organization

cevale2ve.org
1.1 Vision and Objectives

Education and interest in research: **positively** influence and stimulate physics student's interest in HEP research

Awareness of opportunities: **educate and invigorate** the students with further study opportunities in physics and possible career paths in research

Create networks: **in both directions!**

Modernization of the education and training: **through** the use of e-learning tools

Policy making: **working towards formalizing the involvement of Venezuela institutions in HEP experiments**

Virtual research and learning community

Created with the goal of promoting the scientific dissemination, education and research in the field of high energy physics (HEP) in the venezuelan and latin american scientific community.
1.2 Members

The community involves **venezuelan researchers working in international collaborations**: HEP experiments, detector developments, and computing science, developing an academic environment suitable for the steering of the new generations of physicists in Venezuela and other countries of the region.

We are 11 Venezuelan working for European and North American universities linked to CERN and other HEP institutions.
1.3 Institutions

The Institutions continue participating and we all always looking new ways to call the attention of students and professors to be part of the project.
2.1 Postgraduate Course I

We developed a course for university students in physics.
- The ideal audience is master and PhD students from the latin american countries.
- The classes are in spanish but the written materials are *yet* in english
- The classes were possible using Google hangout and transmitted and recorded in YouTube.
- The program contains subjects that go from the Standard model, to accelerator and detector technology, data analysis under ROOT and statistics.

The program in Modules:
- Introduction to Standard Model (SM) and physics Beyond the SM
- Accelerator principles
- Particle detector principles
- Introduction to statistics
- Data analysis and computer Tools based in ROOT
- A serie of seminars by invited speakers working in relevant areas of physics

The course has a total duration of 60 hours.

We, the instructors are Europe, so the class starts at 21hrs and for the students is 14hrs and 15hrs depending of the country :)
2.1 Postgraduate Course II

First Post-graduate course completely online

During the second half of 2014 took place the first course “Introduction to Particle Physics” for master's and doctoral students.

With 3 venezuelan institutions!
2.1 Postgraduate Course III

Second Post-graduate course completely online

Just a week ago we close the second edition of the course “Introduction to Particle Physics” for master’s and doctoral students.

This time with 4 Colombo-Venezuelan institutions!
producing >70 hours of online audio-visual content and ~9K view of our videos... (dozens of comments in the tutorials!)

https://www.youtube.com/channel/UCQFMVmz9Yd48XyHXx6lsTjw
2.2 Students Supervisions

In Physics:
- We have a Master student in physics developing a thesis in the evaluation of a Dark Matter model production in association with heavy quarks in colliders like the LHC.
- She was part of our first session of the course in 2014-2015 and is currently enrolled in the UCV in Venezuela.
- This project is itself a test-field for newer technologies and tools in e-learning and data analysis!
- The plan is to finalize at the end of 2016.

In Languages:
- This have been another beautiful example of the interdisciplinarity that can be involved.
- A university student in Languages was part of our group helping in the translation of all the classes of the first course into spanish.
- The idea of this project is to have a dual spanish-english set of classes and slides that allow us to expand the impact of the classes to other students.
- She just got her bachelor's degree few weeks ago at ULA in Venezuela!
3. Outreach
cavele2ve.org
3.1 Tools

As part of HEP collaborations, many of the tools that we use to teach are in synchrony with those used in other outreach projects (like the CERN OpenData).

Tools like the software or the techniques. As well in the communication and organizational part.

The recent release of the ATLAS Open Data portal is one of the examples of the constant feedback between the two!
3.2 Masterclasses and ATLAS Virtual Visits

First time of Venezuela in Masterclasses!

At the front-end and back-end of the Virtual Visit Venezuela + Colombia 2016
We have been looking to communicate the projects and results to the public and diplomatic members. And, we always get help of different media here and there, thanks!
The CEVALE2VE is a HEP educational and outreach project for Latin America. With the help of a lot of people in both side of the ocean, we developed a course in particle physics as an “excuse” to create and strengthen ties between members of the scientific community. Several students have got a good start in their advance studies thanks to this collaboration and their incredible energies: some of our students have participated in the HEP CERN-LA school, CERN/DESY summer student programs.

Next project? With the ICTP Physics Without Frontiers program, sponsored by ATLAS, in October 2016, we go to Venezuela and Colombia for personal contact with the students, professors and general public in several outreach activities for two weeks!