A Venezuelan input

To the Latin American Strategy for Research Infrastructures (LASF4RI)

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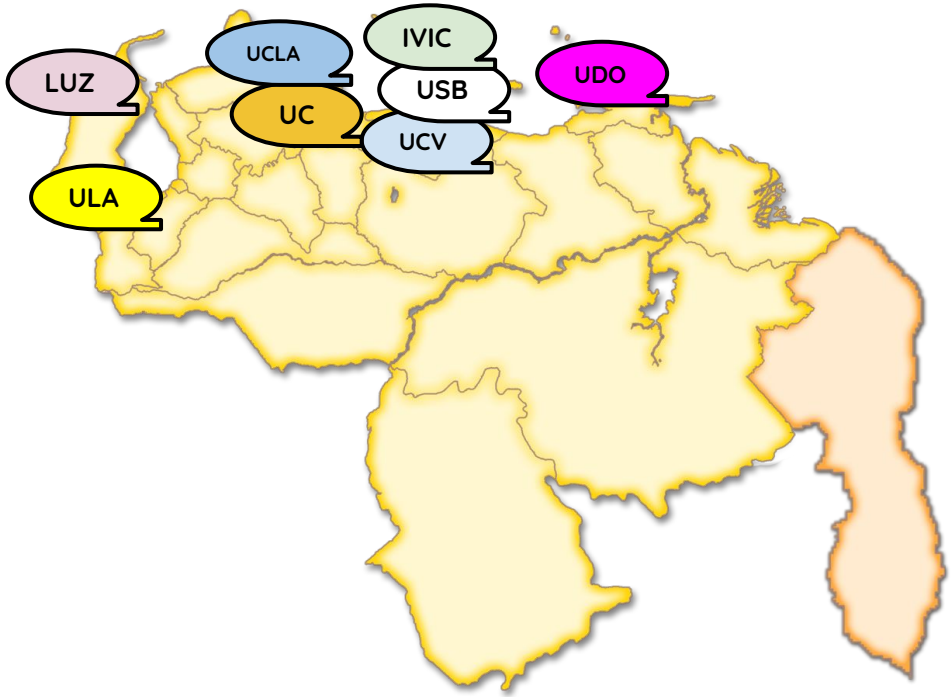
Scientific Context

- Astronomy and Astrophysics (A&A), and High Energy Physics (HEP) has about 60 years of continuity since its formalisation in **research institutes and public universities.**
- Historical strength in the areas of theoretical HEP, A&A, Field Theory, Gravitation, General Analytical and Numerical Relativity, Strings and Membranes theories.
- From the '80s of the 20th century, the postgraduate activity in Fundamental Physics began to become massive, and the local research activity in the areas mentioned above was consolidated.

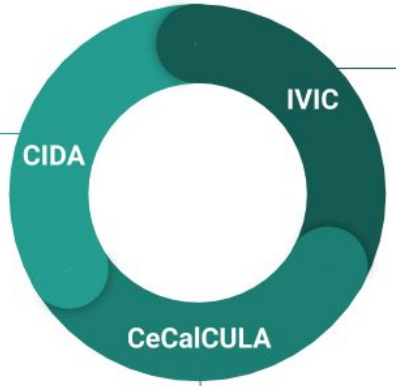


Scientific Context

- In the '90s, CeCalCULA takes centre stage as a national and international training centre and super HPC.
- Astronomy: CIDA
- Nuclear Physics: IVIC, USB
  - Fundamental research, geophysics, medical, etc
- Medical Physics: IVIC, UCV
  - Positive impact in research and clinical areas

The Centro de Investigaciones de Astronomía (CIDA)

Venezuela's main astronomical observatory is the Llano del Hato National Astronomical Observatory, located 3600m above sea level in the Venezuelan Andes providing training.



The Venezuelan Institute for Scientific Research (IVIC)

It is the reference research centre in the country in several fields, including materials and life sciences.

Centro Nacional de Cálculo Científico (CeCalCULA)

is the first supercomputing center in Venezuela. This center develops services and training of personnel in the area of high performance computing.

Present threats

- **Brain drain**
  - HEP, Gravity and Astrophysics began to suffer a considerable decrease due to the loss of staff in universities and research institutes
  - This depletion of the trained human resource has also impacted the training of human resources, compromising the continuity of the entire research ecosystem in the country
- Promotion and support of university research and education have several years of stagnation.
  - There are no discussion mechanisms, **with a broad call**, to address the issue shortly
- The continuity of the current autonomous regime of Venezuelan public universities is subject to the resolution of conflicts that prevent the renewal of their governing bodies, following their regulations
  - Changes in this autonomy regime **may have an impact in the near future** on the curricular structure, in the areas of research and projects that can be developed effectively.

Reaction: network

- Research groups based in Venezuela and their colleagues abroad are looking for ways to strengthen collaborative ties that allow maintaining the production of human talent.
- **CEVALE2VE**
  - Established project since 2014 !
  - www.cevale2ve.org
- **BrainGain (2 editions!)**
  - A joined professional fellowship effort with the PWF program @ICTP
  - https://www.ictp.it/physics-without-frontiers/braingain-venezuela.asp

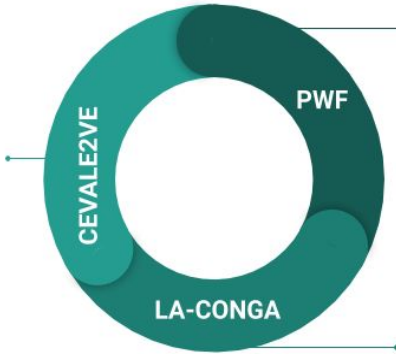
- **LA-CoNGA Physics**
  - http://laconga.redclara.net/
  - (There is a dedicated WP and presentation for this proposal !)

The proposal

- Continue developing, partnering in and executing capacity-building projects
- Continue to maintain local research groups and postgraduate programs
- Develop and execute projects in data analysis with a focus on reproducible research practices
- Make available to the Venezuelan community practical help, consultancy and support in transversal areas
    - Computing and software development, to give some examples

Centro Virtual de Altos Estudios de Altas Energías (CEVALE2VE)

A virtual research and learning community. **Created with the goal of promoting the scientific dissemination, education and research in the field of particle and high energy physics in the Venezuelan and Latin American scientific community**



ICTP Physics Without Frontiers (ICTP-PWF)

The Latin American section of the ICTP Physics Without Frontiers program is an effort leading by the ICTP, Venezuelan and Colombian researchers.

Latin American Alliance for Capacity building in Advance (LA-CONGA) Physics Initiative

The primary objective of the project is to modernise the educational platform in eight Latin American higher education institutions (HEI) from the Andean region using HEP as a model.

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