

Chilean Virtual Observatory



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Overview

Who am I, and how did I get here?

Motivation

Goals

Involved community

Who am I?

- Mauricio Solar Fuentes, Ph.D in Computer Sciences, expertise in artificial intelligence, parallel computing.
- Director of project entitled: "Development of an Astro-Informatic Platform for Management and Intelligent Analysis of Large-scale Data".
- I come representing the Chilean Community, which is now working to create the Chilean Virtual Observatory.

Motivation

- In Chile, the astronomy has become one of the scientific fields with a surprising growth rate in the last years.
- There are more than a dozen astronomical facilities in our country, for example:
 1. Atacama Large Millimeter/submillimeter Array (ALMA)
 2. Very Large Telescope (VLT)
 3. And soon the European Extremely Large Telescope (E-ELT)
- One of the conditions established in our country, is that the 10% of the observation time belongs to the Chilean astronomical community
- **Motivation:** it's necessary to develop an astrophysical platform for the data administration and intelligent analysis.

Considered issues

The ALMA project, which when fully operational will generate over 1TB of data per observation day. So, we consider the following issues:

- **Storage**, is necessary to have data center capable of storage according the data consumption needs.
- **Access**, in this project it has been decided that a web system is an appropriate mechanism to supply this requirement.
- **Processing**: Having large volumes of data, the processing to accomplish, requires more time than usual and computational resources. So a computational cluster, can be an useful tool to facilitate this work.

Involved community

Currently, a project entitled "Development of an Astro-Informatic Platform for Management and Intelligent Analysis of Large-scale Data" is being developed, financed by government funding, for a period of 28 months, and with the participation of the following institutions:

- Atacama Large Millimeter/submillimeter Array (ALMA)
- Consorcio Red Universitaria Nacional Reuna (REUNA)
- Universidad Técnica Federico Santa María
- Universidad de Chile
- Universidad Católica de Chile
- Universidad de Concepción
- Universidad de Santiago de Chile

The **Goals** of the project are related to the design and implementation of a virtual observatory, which shall comply the standard of the International Virtual Observatory Alliance (IVOA), in closely collaboration with the Chilean astronomical community.

Also "Consortio Red Universitaria Nacional" will provide solution for the problems related to the connectivity of high rate data transmission, and the National Laboratory for High Performance Computing, will helps storing the data will require large storage capabilities.

These institutions join efforts to achieve, create and establish in time a platform unprecedented in the Chilean astroinformatics field, the Chilean Virtual Observatory (**ChiVO**).

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