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Handling Cosmological Simulations at the Port d'Informació Científica (PIC)

Content

Our group at the Port d'Informació Científica (PIC) collaborates with different cosmology projects such as the Dark Energy Survey (DES), Euclid, the Physics of the Accelerating Universe Survey (PAUS) and the Marenstrum Institut de Ciències de l'Espai simulations (MICE). For these projects, simulations are a key ingredient in the whole data flow, from feeding the software pipelines to finally enabling to achieve precise estimations of cosmological parameters.

Cosmological simulations are usually rather large (> 100 GiB) and most users only require specific subsets related to their own field of work. At PIC, we have developed CosmoHub (<https://cosmohub.pic.es>), a web platform based on Hadoop to perform interactive exploration, customization and distribution of massive astronomical datasets without any Structured Query Language (SQL) knowledge required. It currently manages over 60 TB of catalogued information and over 50 billion objects, and provides support to an ever-growing worldwide community of more than 1000 scientists.

During the talk I will describe CosmoHub and some of the lessons learned during the last years handling cosmological simulations.

Preferred talk time

May 25 at 13:30 UTC

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Track Classification: Applications; Data Access Layer; Grid and Web Services; Science Platform workshop

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