



ID de Contribution: 2

Type: Non spécifié

High-resolution SZ observations for cluster cosmology with NIKA2

mardi 22 novembre 2022 14:10 (40 minutes)

As the largest gravitationally bound objects in the Universe, galaxy clusters are key tools to study large-scale structure formation processes and to constrain cosmological models. These studies, however, require the mass of clusters to be calibrated, for example with a mass-observable scaling relation. Systematic effects, in particular at high redshift, have an impact on this calibration and are currently the main limitation of cluster-based cosmology.

NIKA2, a millimeter camera installed at the IRAM 30-m telescope is a key experiment to extend our understanding of galaxy clusters. Combining sub-arcminute ($17.2''$ at 150 GHz) angular resolution and a 6.5 arcmin diameter field of view, NIKA2 is resolving the Sunyaev-Zel'dovich (SZ) effect towards clusters up to high redshifts. Combined with X-ray data from XMM-Newton satellite, we can infer with high precision the thermodynamical properties and the hydrostatic masses of such objects within the NIKA2 SZ Large Program (LPSZ), which covers a representative sample of 45 galaxy clusters at redshifts from 0.5 to 0.9.

In this talk I will present the latest results of the LPSZ and I will show for the first time preliminary results on the LPSZ sample characteristics, including the cluster masses and mean pressure profile. Based on these results, I will discuss the systematic effects impacting the mass reconstruction, such as the presence of sub-structures, and their implication for cluster cosmology.

Auteur principal: HANSER, Corentin (UGA)

Orateur: HANSER, Corentin (UGA)

Classification de Session: Session #1