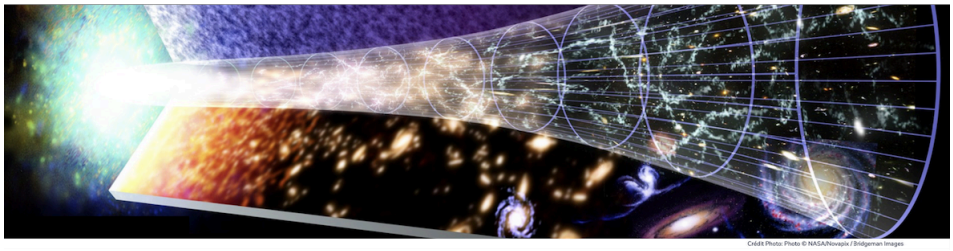

Contribution ID: **30** Type: **not specified**

Accurate galaxy cluster cosmology with the NIKA2 Sunyaev-Zeldovich Large Program

Wednesday, January 18, 2023 3:40 PM (20 minutes)

“Current cosmological studies based on clusters of galaxies are limited by the accuracy with which the mass and the universal properties of these objects can be inferred. The Sunyaev-Zeldovich (SZ) effect is a direct probe of the thermal pressure in the intra-cluster medium. Resolved mapping of the SZ effect towards galaxy clusters is thus the best way to measure their mean radial pressure profile. Moreover, in combination with X-ray data, the mass of the cluster can be measured from high-resolution SZ observations under the hydrostatic equilibrium hypothesis. The NIKA2 camera operating at the IRAM 30-m telescope observes at 150 and 260 GHz with an angular resolution of a few tenths of arcsecondes. As part of the NIKA2 guaranteed-time, the SZ Large Program is devoted to the high-angular resolution SZ mapping of a representative sample of 45 galaxy clusters drawn from the SZ-selected catalogues of the Planck satellite and of the Atacama Cosmology Telescope, and also observed in X-ray with XMM-Newton or Chandra. The main goal of this program is to provide the community with unprecendenteed measurements of the mean pressure profile of galaxy clusters and of the scaling law between the SZ observable and the hydrostatic mass, extending previous measurements to higher redshifts and lower masses, in order to improve the accuracy of cosmological constraints with galaxy clusters. I will review the status of the SZ Large Program, discuss recent results and future implication for cosmology. “

Presenter: PEROTTO, Laurence (LPSC)