## **Colloque national CMB-France #5**



ID de Contribution: 5

Type: Non spécifié

## Cosmology with Planck-detected clusters: a new multi-wavelength analysis

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Galaxy clusters are a powerful cosmological probe: they track the latest evolution of large scale structure and are therefore fundamental for testing the cosmological model in the recent Universe.

CMB experiments represent a great opportunity for cosmology with galaxy clusters: due to the inverse Compton scattering of CMB photons by the hot gas of clusters, they are signal-limited, full-sky (or at least large area) surveys of clusters.

To compare the observations of galaxy clusters with the theoretical prediction and thus constrain the cosmological parameters of the underlying model, a precise knowledge of clusters' masses and redshift is required. Scaling relations relating the mass with a given cluster observable (like the richness in optical wavelength,  $Y_{SZ}$  in the mm-band or  $Y_X$  in X-rays) are usually used to compute the mass of clusters.

We provide a new scaling relation using a large and representative sample of clusters from the Planck Early Sunyaev-Zeldovich catalogue that was observed in X-rays by Chandra, and compare it to the results of the Planck collaboration obtained from XMM-Newton observations.

We calibrate a new mass bias using weak-lensing data, obtain cosmological constraints from the Planck cosmological cluster sample and discuss the link between mass calibration and cosmological tensions.

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