

Cosmological Frontiers in Fundamental Physics Triangular Conference : APC - Perimeter - Solvay 2021



ID de Contribution: 16

Type: Non spécifié

Enabling kSZ cosmology using Fast Radio Bursts

jeudi 27 mai 2021 17:30 (40 minutes)

Sub-percent precision measurements of the kSZ effect – small-scale anisotropies in the CMB due to scattering off clouds of moving ionized gas – will be possible with upcoming CMB and galaxy surveys, so it is timely to ask what science can be extracted with such measurements. I will discuss how recasting kSZ tomography as a bispectrum measurement allows for a unified framework under which the “galaxy optical depth degeneracy” problem becomes clear; the cosmic velocity field and an astrophysical power spectrum involving the electron density appear together. However, these are degenerate only up to an overall amplitude. I will also discuss a way to break the optical depth degeneracy using the dispersion measures of fast radio bursts (FRBs) allowing for strong constraints on the growth of cosmic structure.

Orateur: Prof. MADHAVACHERIL, Mathew (Perimeter Institute for Theoretical Physics)

Classification de Session: Second Session, Thursday