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Cosmic Hemispherical Asymmetry and its implications

Tuesday, 15 November 2016, 13:00
Room A304

Measurements by WMAP and Planck have confirmed more than 3σ departure from statistical isotropy (SI) in the temperature field of cosmic microwave background (CMB) at large scales, which is popularly known as Hemispherical Asymmetry. Such an anomalous signal is beyond the standard Λ CDM cosmological model and can lead to important cosmological consequences. I will discuss about the imprints of this phenomenon on other cosmological windows. Hemispherical asymmetry on scalar perturbations also affect the large scale matter distribution of the Universe which in turn can generate SI violation at small scales in the CMB B mode polarization due to weak lensing. Measurement of this signature from B modes can impose constraints on extent of the asymmetry in the matter distribution. Finally the implications of this anomaly on best-fit cosmological parameters will also be discussed.