Contribution ID: **357** Type: **Oral Presentation**

A Bayesian approach for detecting Isotropy violation in the CMB sky

Wednesday 31 July 2019 17:00 (20 minutes)

Even though the standard model of cosmology predicts a statistically isotropic (SI) CMB sky, the SI violation signals are always present in an observed sky-map. Given a completely statistically isotropic CMB, different cosmological artifacts, measurement effects and unavoidable effects during data analysis etc. may lead to isotropy violation signals in an otherwise SI sky. Therefore, a proper data analysis technique should account for all these SI violation signals. It will help us to match the SI violation signals in the sky with the known isotropy violation signals and then conclude if there is any SI violation present in the intrinsic CMB sky.

We develop a software package, SIToolBox, for measuring the isotropy violation signals in the CMB sky in presence of anisotropic noise and masked sky using a completely Bayesian formalism. In this presentation I will discuss the formalism for measuring the isotropy violation in CMB sky and present the estimates of isotropy violation, Doppler boost and dipole modulation parameters etc. using SIToolBox in WMAP and Planck type of skymap.

Author: DAS, SANTANU (University of Wisconsin-Madison)

Presenter: DAS, SANTANU (University of Wisconsin-Madison)

Session Classification: Astroparticles & CMB

Track Classification: Astroparticles & CMB