Contribution ID : **292** Type : **Oral talk**

Copernican Principle Beyond the FLRW Universe

Friday, 2 December 2022 12:00 (15)

We present the dipole cosmological principle, the notion that the Universe is a Copernican cosmology agreeing with a cosmic flow. It suits the most symmetric paradigm that generalizes the FLRW ansatz in the context of numerous suggestions that have appeared in the literature for a non-kinematic component in the Cosmic Microwave Background dipole. Field equations in our "dipole cosmology" are still ODEs, but we now have four instead of the two Friedmann equations. The two extra functions can be regarded as an additional scale factor that breaks the isotropy group from SO(3) to U(1) and a "tilt" that denotes the cosmic flow. The result is an axially isotropic universe. We examined the dynamics of expansion rate, anisotropic shear, and tilt for some cases. An important observation is that the cosmic flow (tilt) can grow while the anisotropy (shear) dies down.

Primary author(s) : MONDOL, Ranjini; Prof. KRISHNAN, Chethan (Indian Institute of Science, Bangalore); Prof. SHEIKH-JABBARI, Mohammmad Mahdi (School of Physics, Institute for Research in Fundamental Sciences (IPM))

Presenter(s) : MONDOL, Ranjini

Session Classification : Gravitation and Cosmology

Track Classification : Gravitation and cosmology