



Contribution ID: 374

Type: **Talk**

The Effect of Our Cosmic Neighborhood's Magnetic Field on UHECR Propagation

Monday 21 July 2025 13:35 (15 minutes)

Propagation effects play an important role in structuring UHECR data, altering their arrival directions, energy spectrum, and mass composition. Cosmic magnetic fields modify the trajectories of electrically charged cosmic rays as they travel from their sources to Earth. While small-scale magnetized structures do not significantly impact UHECR propagation, they influence our reconstruction of the large-scale magnetic field derived from synchrotron and Faraday rotation data. In this context, the Local Bubble - a cavity of hot gas surrounded by a thick, magnetized shell - is one of the most important foregrounds to consider, as it encloses the Solar system. We focus on the effects of the Galactic magnetic field, including the Local Bubble, on the study and interpretation of UHECR data.

Collaboration(s)

Author: PELGRIMS, Vincent

Co-authors: MARIS, Ioana; UNGER, Michael (Karlsruhe Institute for Technology)

Presenter: PELGRIMS, Vincent

Session Classification: CRI

Track Classification: Cosmic-Ray Indirect