



Contribution ID: 594

Type: **Talk**

Observation of medium-scale anisotropy of very high-energy cosmic rays with LHAASO-KM2A

Tuesday 15 July 2025 16:35 (15 minutes)

The intensity of Galactic cosmic rays in the arrival directions is highly isotropic, however, many cosmic ray experiments have observed weak anisotropies of various angular sizes. In this work, we report the observation of the medium-scale structures with the square kilometer array of the Large High Altitude Air Shower Observatory (LHAASO-KM2A). We have found that the positions of the excess regions, located at $\alpha \sim 320^\circ$, $\delta \sim 30^\circ$ (around 17 TeV), and $\alpha \sim 120^\circ$, $\delta \sim 40^\circ$, provide compelling evidence of energy dependence within the energy range of 10 TeV to over 100 TeV. Furthermore, the evolution behaviors of energy dependence may indicate that local complex turbulent environments play a potential role in the propagation of cosmic rays, which offers a new perspective on their origin and transport of cosmic rays.

Collaboration(s)

The LHAASO Collaboration

Author: HE, Jiayin

Co-authors: Prof. ZHANG, Yi (Purple Mountain Observatory); Dr ZHAO, Shiping (Purple Mountain Observatory); Prof. YUAN, Qiang (Purple Mountain Observatory)

Presenter: Dr ZHAO, Shiping (Purple Mountain Observatory)

Session Classification: CRI

Track Classification: Cosmic-Ray Indirect