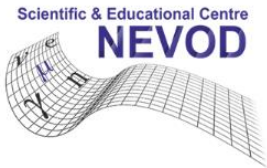


Study of the anisotropy of cosmic rays during the periods of the minima of the 24th solar cycle using the muonography method according to the data of the URAGAN muon hodoscope



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What is this contribution about?

- The muonography approach based on the matrix data of the URAGAN muon hodoscope (MEPhI, Moscow), allowed us to study the behavior of the anisotropy of cosmic rays during the periods of minimum solar activity: 2009–2010 and 2018–2019.

Why is it relevant/interesting?

- Selected periods are associated with the beginning and end of the 24th solar cycle and are characterized by different polarities of the IMF. Therefore, it was important to study the behavior of the anisotropy of the angular distribution of the muon flux during these periods.

What has been done?

- We used the muonography method developed at MEPhI to construct GSE maps of deformation regions of the angular distribution of the muon flux during the development of recurrent disturbances of the IMF and studied the dynamics of CR anisotropy changes in these periods with different IMF polarities.

What is the result?

- The proposed approach to displaying the anisotropy region in the angular distribution in matrix form made it possible to estimate the degree of deformation, the zenith and azimuthal angles of the center of the CR anisotropy region in the local coordinate system, and its longitude and latitude in the GSE system.

Distributions of anisotropy areas ($\geq 5\sigma$, increasing (pink) and decreasing (violet)) and pitch angles in the CR flux.

