

## **March 24th, 2024 Forbush effect: cosmic ray variations spectra, anisotropy and magnetospheric current system parameters**

Using data of ground-level cosmic ray observations at the worldwide network of neutron monitors, Yakutsk muon telescope and URAGAN muon hodoscope (Moscow) and the spectrographic global survey method, we calculated cosmic ray variations spectra and anisotropy, as well as changes in the planetary system of rigidities of geomagnetic cutoff during the Forbush effect of March 24th, 2024. At the sites of muon component observations, mass-average air temperature was also obtained. We demonstrate that cosmic ray variations spectra can't be described by a power law function in a wide range of rigidities. We established, that during the aforementioned event, a "magnetic loop"-like structure of the interplanetary magnetic field was present at Earth's orbit. Based on the data on changes in the planetary system of rigidities of geomagnetic cutoff, we estimated parameters of the primary current systems of the magnetosphere during the March 24th, 2024 geomagnetic storm within an axisymmetric magnetosphere model.

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