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INTERPLANETARY MAGNETIC FIELD TURBULENCE AND RIGIDYTY SPECTRUM OF THE GALACTIC COSMIC RAYS INTENSITY VARIATION

Tuesday, 6 September 2016 16:30 (1h 45m)

We investigate a relationship between the temporal changes of the rigidity R spectrum exponent G of the Galactic Cosmic Rays (GCR) intensity variation and the exponents Ny and Nz of the Power Spectral Density (PSD) of the By and Bz components of the Interplanetary Magnetic Field (IMF) turbulence in different periods of solar activity. We show that a temporal changes of the parameters G, and Ny and Nz can be considered as the very essential proxies to study GCR propagation in heliosphere. We demonstrate that a reliable dependence of the rigidity R spectrum exponent G of the GCR intensity variation on the parameters Ny and Nz give an opportunity to construct a more realistic model of transport equation for describing a propagation of GCR in heliosphere when data of IMF absent. For this purpose we construct a 2D non stationary model of transport equation using the exponents G and Ny as an alternative proxies and show a satisfactorily coincidence of a density and a spatial gradients of GCR.

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