



Contribution ID: 1059

Type: **Poster contribution**

FEATURES OF THE INTERPLANETARY MAGNETIC FIELD TURBULENCES IN DIFFERENT EPOCHS OF SOLAR ACTIVITY

Tuesday 4 August 2015 16:00 (1 hour)

Data of Bx, By, Bz components of the Interplanetary Magnetic Field (IMF) have been used to study a features of the IMF turbulences for two positive ($A>0$) and two negative ($A<0$) polarity epochs of solar magnetic cycles (1969-2011).

We found that the changes of the exponents v_y , v_z , v_x of the Power Spectral Density (PSD) of the By, Bz, Bx components of the IMF show a radical alternation of the large-scale structure of the IMF turbulence in period 1969-2011.

We found a distinction between the temporal changes of the exponents v_y , v_z , v_x for the $A>0$ and the $A<0$ polarity epochs of solar magnetic cycles, especially in minima and near minima epochs of solar activity.

We suppose that the changes of the turbulence in the range of frequencies $[10^{-6}-10^{-5}]$ Hz (responsible for the scattering of the GCR particles of the energy 5-50 GeV) and the module B of the IMF versus solar activity can be considered as the general reasons of the long period variations of the GCR intensity.

Collaboration

– not specified –

Registration number following "ICRC2015-I"

827

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Session Classification: Poster 3 SH

Track Classification: SH-EX