



Temporal changes of the rigidity spectrum of the 27-day variation of the galactic cosmic ray intensity.

A. Gil (1) and M.V. Alania (1,2)

(1) University of Podlasie, Institute of Mathematics and P. Siedlce, Poland (gila@ap.siedlce.pl), (2) Institute of Geophysics of Academy of Sciences of Georgia, Tbilisi, Georgia

We study the features of the power rigidity spectrum of the 27-day variation of the galactic cosmic ray (GCR) intensity by neutron monitors experimental data for different epochs of solar activity. The rigidity spectrum of the 27-day variation of the GCR intensity is soft in the maximum epochs, and is hard in the minimum and near minimum epochs of solar activity for the $A>0$ and $A<0$ polarity periods of solar magnetic cycles; for the temporal changes of the rigidity spectrum of the 11-year variation of the GCR intensity there is observed the vice versa situation. Also, we find some peculiarities in manners of the temporal changes of the energy spectrum of the 27-day variation of the GCR intensity in the period of 1988-1992, which includes the clear Gnevish's damping period (1990).

We challenge to interpret our results (obtained from the neutron monitors experimental data) based on the modern status of the GCR modulation in the heliosphere including the theoretical modeling based on the 3-D transport equation.