HELIOSPHERIC MODULATION STRENGTH DURING THE NEUTRON MONITOR EPOCH

I.G. Usoskin (1), K. Alanko (2), K. Mursula (2), K. Kudela (3) and G.A. Kovaltsov (4)
(1) Sodankylä Geophysical Observatory (Oulu unit), FIN-90014 University of Oulu, Finland, (2) Dept. of Physical Sciences, University of Oulu, Finland, (3) Institute of Experimental Physics, Watson st. 47, 04353 Kosice, Slovakia, (4) Ioffe Physical-Technical Institute, 194021 St.Petersburg, Russia.
Ilya.Usoskin@oulu.fi

Using a simple stochastic simulation model of the heliosphere we calculated galactic cosmic ray spectra at the Earth's orbit for different values of the heliospheric modulation strength Φ. Convoluting these spectra with the specific yield function of a neutron monitor, we obtained the expected neutron monitor count rate for different values of Φ. The count rate at $\Phi = 0$ (i.e., if there is no heliospheric modulation) serves as the normalized 100% level. We present here the normalization curves which allow to easily estimate the value of Φ on the basis of actually recorded neutron monitor count rate. Using this approach we estimated the heliospheric modulation strength for the neutron monitor epoch since 1953.