GROUND ENHANCEMENTS OF SOLAR COSMIC RAYS IN THE SPRING OF 2001: PRELIMINARY DETERMINATION OF OBSERVED PECTRUM, DIFFUSION COEFFICIENT IN THE INTERPLANETARY SPACE, AND SPECTRUM IN THE SOURCE ON THE BASIS OF NEUTRON MONITOR DATA.

L.I. DORMAN (1,2), A.V. Belov (2), E.A. Eroshenko (2), R.T. Gushchina (2), N. Iucci (3), H. Mavromichalaki (4), M. Parisi (3), L.A. Pustil'nik (1), A. Sternlieb (1), E.V. Vashenyuk (5), G. Villoresi (3), V.G. Yanke (2), I.G. Zukerman (1)
(1) Israel Cosmic Ray Center and Emilio Segre' Observatory, affiliated to Tel Aviv University, Technion and Israel Space Agency, Israel; (2) IZMIRAN, Russian Academy of Science, Troitsk; (3) Dipartimento di Fisica "E. Amaldi", Università "Roma Tre", Rome, Italy; (4) Physics Department, University of Athens, Greece; (5) Polar Geophysical Institute, Kola Scientific Center, RAN, Russia.
e-mail: lid@physics.technion.ac.il/fax: 972-4-6964952

In the spring of 2001 was observed several ground enhancements of solar cosmic rays generated in the flare acceleration processes. On the basis of data of neutron monitors Apatity, Athens, ESO, Moscow, and Rome characterized by different cut-off rigidities we determine approximately for each event by the method of coupling functions the spectrum of primary variations. We estimate also approximately diffusion coefficient in dependence of particle energy characterized the propagation in the interplanetary space. On the basis of obtained results we try to determine spectrum in the source and total number of accelerate particles. We use a new coupling functions determined recently with a high accuracy on the basis of Italian cosmic ray survey to Antarctica (Dorman et al., 2000)

REFERENCES:

Dorman, L.I.; Villoresi, G.; Iucci, N.; Parisi, M.; Tyasto, M.I., Danilova, O.A.; Ptitsyna, N.G., 2000. "Cosmic ray survey to Antarctica and coupling functions for neutron component near solar minimum (1996-1997), 3, Geomagnetic effects and coupling functions" J. Geophys. Res. Vol. 105, No. A9, p. 21,047-21,058.