

## CR-SA HYSTERESIS PHENOMENON ON THE BASIS OF NM DATA,

### 5. RESULTS FOR SOLAR MINIMUM 1994-1996.

L.I. Dorman (1,2), N. Iucci (3), G. VILLORESI (3)

(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, Russia; (4) Dipartimento di Fisica "E. Amaldi", Università "Roma Tre", Rome, Italy;

On the basis of NM data on stations with different cut-off rigidities we found rigidity dependence of galactic cosmic ray long-term variation near the last solar minimum (sunspot numbers W£40, period January 1994-January 1997). In the frame of the model of global cosmic ray modulation in the Heliosphere with taking into account time-lag of processes in the interplanetary space relative to processes on the Sun by using data on solar activity-cosmic ray hysteresis effects, we determine the dimension of modulation region, radial diffusion coefficient, cosmic ray intensity out of the Heliosphere, and residual cosmic ray modulation in dependence of primary cosmic ray particle rigidity with taking into account drift effects according to Burger and Potgieter (1999). We include in the consideration drift effects (as depending from the sign of solar polar magnetic field and determined by difference of total CR modulation at  $A > 0$  and  $A < 0$ , and with amplitude dependent from the value of tilt angle between interplanetary neutral current sheet and equatorial plane). The amplitude of drifts in dependence of CR particle rigidity we use what was obtained in Dorman et al. (2001) from comparison of CR modulation in odd and even solar cycles. We estimate the dimension of modulation region (with taking into account the influence of nonlinear processes on the solar wind speed in the outer Heliosphere according to Le Roux and Fichtner, 1997), the radial diffusion coefficient and transport path in radial direction as well as residual CR modulation in the minimum of solar activity in dependence of primary CR particle rigidity. We discuss these results in connection with obtained in Dorman et al. (2001).

#### REFERENCES:

Burger, R. A., and M. S. Potgieter, Proc. 26th Inter. Cosmic Ray Conf., 7, 13, 1999.

L.I. Dorman et al., CR-SA hysteresis phenomenon on the basis of nm data, 4.

Comparison of time-lags for odd and even solar cycles, relative role of drifts. Proc. 27th ICRC, 2001, Paper SH...

Le Roux, J. A. and H. Fichtner, *Ap. J.*, 477, L115, 1997.