

COSMIC RAY MODULATION AND THE HELIOSPHERE

G. Exarhos (1,2), X. Moussas (1)

(1) University of Athens, Faculty of Physics, Dept. of Astrophysics,
Panepistimiopolis GR 15783,

Zografos, Athens, Greece

(2) Siemens Hellas A.E., Promitheus 12, Nea Kifisia, Athens, Greece

exarhosg@siemens.gr, xmoussas@cc.uoa.gr

We reproduce the long-term temporal variations of galactic cosmic ray intensity applying a semi-empirical 1-D diffusion-convection model and using the concept of “magnetized shells”. Each magnetized shell modulates the cosmic ray intensity for as long as it travels from the Sun to the outer heliospheric boundary. The cosmic ray intensity at the Earth's orbit is the result of the successive dynamic influence of all shells between the Earth and the time varying heliospheric boundary. Our results are in very good agreement with ground-based observations from Climax and Huancayo cosmic ray stations.