

## **STATISTICAL ANALYSIS OF SOLAR PROTON EVENTS IN DIFFERENT ENERGY CHANNELS**

M. Gerontidou (1), H. Mavromichalaki (1), V. Kurt (2) and A. Belov(3)  
(1) Nuclear and Particle Physics Section, Physics Department, University of Athens, 15771 Athens, Greece [emavromi@cc.uoa.gr](mailto:emavromi@cc.uoa.gr)/Fax: +30 1 7276987  
(2) Institute of Nuclear Physics, Moscow University, 119899 Vorobievsky Gory, Moscow, Russia, (3) IZMIRAN, Academy of Science Russia

Solar proton events (SPEs) for over three complete 11-year solar cycles (1970-2000) have been studied. In this time period size distributions of all 207 events with proton energy  $>10$  MeV and peak intensity  $>10$  pfu (particle  $\text{cm}^{-2}\text{s}^{-1}\text{sr}^{-1}$ ) observed at 1 AU were obtained. The same analysis has been carried out on statistical events with peak intensity  $>0.01$  pfu for three different energy channels such as  $>30$  MeV,  $>60$  MeV and  $>100$  MeV. Entirely separate distributions imply useful results about the flare sources of SPEs and define a more general indicator of solar activity for a better understanding of the interplanetary conditions that define Space Weather.

An update catalogue of the solar proton events in the energy channels  $>10$  MeV,  $>30$  MeV,  $>60$  MeV and  $>100$  MeV, for the period 1970-2000, where are included information about the probable sources of SPE, is also presented..