

## **ABOUT THE ENERGY SPECTRA OF SOLAR ENERGETIC PARTICLE EVENTS HEAVY IONS**

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The shapes and rigidity are analyzed in the particle (protons, He and Fe ions) energy spectra of large SEP events of 27 September and 19, 22, and 24 October 1989 measured by different techniques within broad energy ranges. The analysis makes use, in particular, of the specified data on the energy spectra of Fe ion fluence measured on Mir space station.

Our measurements have not shown any effect of the SEP event heavy ion energy spectrum becoming more rigid compared with the proton and He ion spectra, as claimed by Tylka et al. [1]. The vast majority of the actual energy spectra of SEP event heavy ions have been shown to be softer than the proton spectra, just as found by us earlier [2].

### **References**

- [1] A.Tylka, W.Dietrich, C.Lopate and D.Reames, High-Energy Solar Fe Ions in the 29 September 1989 Ground level Event, in proceedings of the 25<sup>th</sup> ICRC, V6, 67-70, 1999.
- [2] Nymmik R.A., Probabilistic model for fluences and peak fluxes of solar energetic particles, Radiation Measurements 30 (1999) 287-296.