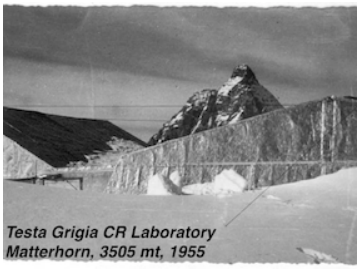

Contribution ID: **35** Type: **poster**

Reassessment of the analysis of GLE 69 using NM data - evidence for a two solar proton flux

Tuesday, 6 September 2016 16:30 (1h 45m)

In January 2005 nearly the end of solar cycle 23 the Sun, namely solar active region NOAA 10720 produced a sequence of powerful solar flares. The fifth of these flares (X7.1) produced solar energetic particles, causing a giant increase in the count rates of the ground-based cosmic ray detectors, namely neutron monitors (NMs), the maximum increase registered at southern polar stations. From the NM data we derived the characteristics of the solar particle flux.
Here we use a previously developed method for analysis, which represents the following steps: a detailed computation of the SEP assymptotic cones of acceptance and rigidity cut-offs of the NMs, application of a neutron monitor yield function and convenient optimization procedure. In this study we use the Planetocosmics code and realistic magnetospheric models, namely IGRF as the internal model and Tsyganenko 89 with the corresponding Kp index as the external one for computation of assymptotic directions. According to our analysis in the initial phase of the event, the solar cosmic ray flux near Earth was extremely anisotropic and the spectrum was very hard. The most important we derive clear signature of two independent SEP flux near Earth. The SEP spectra and pitch angle distributions were computed in their dynamical development. The obtained characteristics are compared with previously reported results and are briefly discussed.

Primary author: Dr MISHEV, Alexander (Oulu University)

Co-author: Prof. USOSKIN, Ilya (University of Oulu)

Presenter: Dr MISHEV, Alexander (Oulu University)

Session Classification: Poster