

Parameters of the Aragats Space-environmental Center monitors as measured at start of 24-th Solar Cycle

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Abstract

Particle monitors located at Aragats Space Environmental Center (ASEC) at altitudes of 1000, 2000 and 3200 m above sea level and geographical coordinates (40°25'N, 44°15'E); Vertical cut-off rigidity in 2007: 7.1 GV, detect charged and neutral components of the secondary cosmic rays with different energy thresholds and various angles of incidence. ASEC monitors were equipped with new DAQ electronics and software significantly enlarging information content of collected data. At the start of the 24-th Solar Cycle in beginning of 2008 it was necessary to measure and calculate main parameters of ASEC monitors. Among them are:

- Barometric coefficients for different dead times neutron monitors electronics and for different energy threshold of muon scintillation detectors;
- Energy thresholds of the Nor Amberd Multidirectional Muon Monitor and SEVAN detectors;
- Mean Multiplicity coefficients of the evaporated neutrons for Aragats and Nor Amberd neutron monitors;
- Count rates of all ~200 measuring channels of ASEC;
- Count rates of different coincidences, corresponding to various angles of incidence of the secondary particles.

All these parameters measured at minimal Solar Activity will comprise a benchmark for further physical analysis of solar modulation events (Ground Level Enhancements, Geomagnetic storms, Forbush decreases, Precursors of radiation and geomagnetic storms) during 24th solar cycle).