Investigation of the Solar Extreme Events (SEE) is important for several reasons: a) it provides unique information about violent processes in the solar corona, including mechanisms of particle acceleration and Coronal Mass Ejection (CME); b) the study of propagation of huge amounts of solar plasma in the interplanetary space can shed light on its interactions with Interplanetary Magnetic Field (IMF) and ambient population of the Galactic Cosmic Rays (GCR); c) Interplanetary shocks and CMEs, along with solar particle and electromagnetic emissions, trigger various dynamic processes in the Earth's magneto sphere, causing global geo-effective events, including geomagnetic storms, heating of the upper atmosphere, changes in the electrodynamic properties of ionosphere, and creation of geomagnetically-induced surface currents. All this constitutes Space Weather (SW) conditions that change dramatically with SEE development.

From September 26 to 30, 2005, 75 scientists and students from 11 countries attended the second conference on Solar Extreme Events (SEE-2005) at Nor Amberd, Armenia.

The conference reports demonstrated that integrated information about the consequences of SEEs, including particle energy spectra, amplitudes and anisotropies of ion fluxes in the vicinity of Earth, strength and direction of the interplanetary Magnetic Field and the state of the magnetosphere, is indispensable for testing solar ion acceleration and propagation models as well as for early diagnostics of the expected impact of violent solar eruptions on technology.

New types of particle monitors, measuring secondary cosmic ray fluxes with inherent correlations are necessary for establishing world-wide networks for Space Weather forecasting. The International Heliophysical Year should provide an excellent opportunity for establishing these networks as well as involve participation of developing countries and, of course, European Space Weather initiatives.

Proceedings of the Second International SymposiumSolar Extreme Events

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Fundamental Science and Applied Aspects
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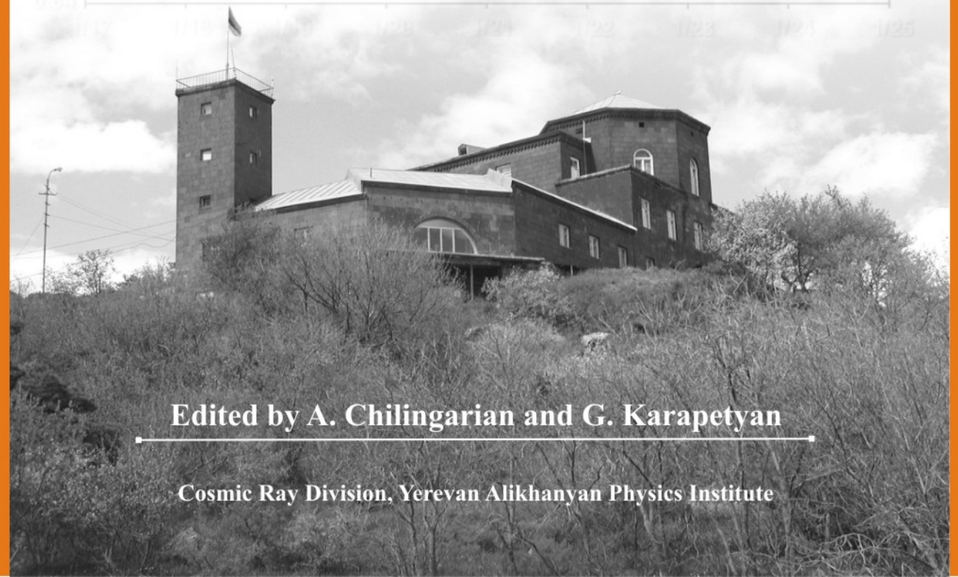

Edited by A. Chilingarian and G. Karapetyan

Cosmic Ray Division, Yerevan Alikhanyan Physics Institute