

Relativistic Proton dynamics in the October-November 2003 GLEs

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The primary relativistic solar proton (RSP) parameters during the ground level enhancements (GLE) 28, 29 October and 2 November, 2003 have been obtained by modeling of the responses of neutron monitors of the worldwide network and comparing them with observations. The modeling comprised an optimization procedure as well as proton trajectory calculations in the up-to-date magnetosphere models of Tsyganenko 2001 (T01) and Tsyganenko 2003 (T03). The spectra, pitch-angle distributions and anisotropy of RSP obtained for successive moments of time allowed to study the dynamical changes of these parameters during the events. The possible scenarios of acceleration / transport particles in the solar corona and interplanetary space have been discussed.