

# **Responses to Solar Cosmic Rays of Neutron Monitors of a Various Design**

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The computed and observable response of neutron monitors of two various types: the standard 3NM-64 and a leadless 4NMD one at the SANAE station during a number of large GLE events were compared. The parameters of relativistic solar protons: rigidity spectrum, anisotropy direction and pitch angle distribution were determined on data of the worldwide network of neutron monitors by modeling technique that included: definition of asymptotic viewing cones of the NM stations under study by the particle trajectory computations in a model magnetosphere T01(Tsyganenko (2001)); calculation of the NM responses at variable primary solar proton flux parameters; determination of primary solar proton parameters outside the magnetosphere by a least square procedure at comparison of computed NM responses with observations.

With use of calculated asymptotic cone of the SANAE station the spectrum of relativistic solar protons falling on atmosphere edge above this point was determined. Then the response of both neutron monitors NM64 and leadless NMD was calculated with use of specific yield function obtained earlier in the latitude and high-altitude survey of both instruments (Stoker, 1985, 1999).