

VALIDITY OF DIFFERENT MAGNETOSPHERIC MODELS FOR SOLAR PROTON PARAMETER MODELING UNDER DISTURBED CONDITIONS

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The primary solar proton parameters outside the magnetosphere may be obtained by an optimization procedure utilizing the ground level enhancement (GLE) effect on the neutron monitor network as well as proton trajectory calculations in a model geomagnetic field. The critical point here is validity of a given magnetospheric model under disturbed conditions. The paper considers the GLE of 7-8 December, 1982 occurred during magnetically disturbed period ($D_{ST} \sim -90nT$). The responses of different neutron monitors and solar proton parameters have been modeled using the Tsyganenko 89 (T89) and Ostapenko-Maltsev-97 (OM-97) models. The latter was specially developed for great negative D_{ST} values (J.Geophys.Res.102, 17467, 1997). The results of calculations have been compared to reveal the effect of D_{ST} causing disturbance on the solar proton trajectories and the modeled count rate enhancement effect for ground based neutron monitors at different local times.