



## **Applying the NM-BANGLE Model in real time**

C. Plainaki (1,2), H. Mavromichalaki (2), C. Sarlanis (2), G. Souvatzoglou (2), Maria Gerontidou (2), A. Papaioannou (2)

(1) INAF-Istituto di Fisica dello Spazio Interplanetario, Via del Fosso del Cavaliere, 00133 Roma, Italy.

(2) Nuclear and Particle Physics Section, Physics Department, Athens University Pan/polis-Zografos 15771 Athens, Greece

The Neutron Monitor Anisotropic Ground Level Enhancement Model (NM-BANGLE) is a cosmic ray model that couples primary solar cosmic rays at the top of the Earth's atmosphere with the secondary component registered at neutron monitors during GLEs. Cosmic ray data from a big number of neutron monitor stations widely distributed around the world are used as an input, whereas the evolution of several GLE parameters, such as the solar cosmic ray spectrum, the anisotropy and the primary particle flux distribution, comprises the model output. In order to render possible real-time space weather monitoring and GLE parameter calculation it is necessary to apply the NM-BANGLE in real-time. In this work the main design of such a real-time project is presented. Cosmic ray input data are intended to be extracted from an already existing neutron monitor database in Athens Neutron Monitor Data Processing Centre (ANMODAP). In the ANMODAP Centre a GLE-Alert program functions already, giving real-time GLE-monitoring. A combination of the NM-BANGLE Model with this existing GLE Alert-program, is further planned.