



Contribution ID: 21

Type: **Oral contribution**

## A New neutron monitor yield function computed for different altitudes: Application for a GLE analysis

*Monday, 3 August 2015 14:45 (15 minutes)*

At present the world wide neutron monitor (NM) network provides continuous information about cosmic ray (CR) variations in the vicinity of Earth. In addition, analyses of ground level enhancements (GLEs) are also based on the NM data records. It is important to have precise information for the NM yield function for primary CRs, which is crucial for an analysis of GLEs. Here we present a newly computed yield function of the standard sea-level 6NM64 neutron monitor for primary proton and alpha CR nuclei. In addition, we present new computations for the altitudes of 3000 m and 5000 m above the sea level. The computations have been carried out with Planetocosmics and CORSIKA codes as standardized Monte-Carlo tools for atmospheric cascade simulations. The flux of secondary neutrons and protons was computed using the Planetocosmics code. A realistic curved atmospheric model was applied. An updated information concerning the NM registration efficiency for secondary neutrons and protons was used. The NM yield function is obtained by convolution of the secondary particle flux with the NM registration efficiency. The effect of the geometrical correction of the NM effective area is considered. The new computation allow us to consider all the NMs in a realistic way, leading to a precise estimation of the spectral and angular characteristics of GLE particles. The obtained results are compared with the previously obtained ones using the double attenuation method.

### Collaboration

– not specified –

### Registration number following "ICRC2015-I"

17

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**Session Classification:** Parallel SH05 GLEs & FDs

**Track Classification:** SH-TH