

About the necessity to build new polar NM stations

Monday, 25 July 2022 13:44 (2 minutes)

For decades, the global neutron monitor network was successfully used to study cosmic ray variations and fluxes of accelerated solar ions, known as energetic solar particles. Recently, it has been used also for space weather purposes, specifically alerts and the related assessment of exposure to radiation. Here, we overview the current status and applications of the global neutron monitor network and discuss its capability to study solar energetic particles, namely assessment of their spectral and angular distribution, during ground level enhancements, focusing specifically on polar neutron monitors. Here we propose to build several new polar neutron monitor (NM) stations in order to optimize the capability of the spaceship Earth to register and provide reliable data for analysis of strong solar particle events, in the light of the possible closure of several stations. We propose to rebuild or open new stations in both the North and South hemisphere, e.g. Alert (ALRT), Heis island (HEIS), Summit station (SUMT), Kotelniy island (KTLN), Vostok (VSTK), Livingston island (LVGI), Barrow (BARW), Wrangel island (WRNG). We argue this proposal scientifically, while funding options need to be investigated.

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Session Classification: Poster flash talks

Track Classification: SH