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## Spectra and anisotropy during GLE 74 on 11 May 2024 derived using neutron monitor data

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Study of solar energetic particles is important to provide the necessary basis to understand the mechanisms of their acceleration and propagation in interplanetary space. It is known that following solar eruptive processes, such as solar flares and/or coronal mass ejections, solar ions can be accelerated to high energies, even in the GeV/n range. In this latter case, the SEP energy is great enough to induce an atmospheric cascade in the Earth' s, which secondary particles can be registered by ground-based detectors, such as neutron monitors (NMs). This class of events is known as ground-level enhancements (GLEs). A notable event occurred on May 11, 2024, observed by NMs and particle detectors aboard spacecraft in near-Earth orbit. The event was observed during the deep phase of a significant Forbush decrease and one of the strongest geomagnetic storms, which make the analysis of this event particularly challenging. Here we performed a precise analysis of NM data records and derived the spectral and angular characteristics of the SEPs leading to this GLE. We modeled the particle propagation in the Earth's magnetosphere and atmosphere. The solar protons spectra and pitch angle distributions were obtained in their dynamical development throughout the event.

## **Collaboration(s)**

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