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## Characteristics of the First Ground Level Enhancement (GLE) of Solar Cycle 25 on 28 October 2021

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We present an overview of the first ground-level enhancement (GLE) event of solar cycle 25, recorded on 28 October 2021 (GLE73), based on the available neutron monitor (NM) network observations and on data from near-Earth spacecraft (GOES, SOHO, SOLO). The maximum increase was ~7.3% for DOMC (Dome C NM at Concordia station) and 5.4% for SOPO (South Pole) conventional NMs located on the Antarctic plateau. Bare (lead-free) NMs at the same sites detected a higher response (14.0% for DOMB and 6.6% for SOPB). The Fort Smith (FSMT) NM shows the earliest increase among the high-latitude NMs, indicating a moderate anisotropy in the first phase of the GLE event. The maximum rigidity of accelerated protons did not exceed 2.4 GV. We estimated the solar release time (SRT) of  $\geq 1$  GV protons into open magnetic field lines at ~15:40 UT. In-situ proton observations from near-Earth spacecraft were combined with the detection of a solar flare in soft X-rays (SXR), a coronal mass ejection (CME), radio bursts and extreme ultraviolet (EUV) observations to identify the solar origin of the GLE. Around the  $\geq 1$  GV proton SRT the CME-driven shock was located at a height of ~2.33 Rs. The timing of the EUV wave evolution towards the field lines magnetically connected to Earth seem to be in good agreement with the inferred release time of  $\geq 1$  GV protons.