



Measurements of cosmic rays by a mini neutron monitor aboard the German research vessel Polarstern

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Neutron monitors are ground-based devices that measure the secondary particle population, i.e., neutrons produced by, e.g., galactic cosmic rays (GCRs). Due to their functionality, they are integral counters whose flux is proportional to the variation of the input spectrum. However, the measured flux also depends on the geomagnetic position and the static pressure at the monitor's location. To better understand the instrument response, the Christian-Albrechts-Universität zu Kiel, DESY Zeuthen, and the North-West University in Potchefstroom, South Africa, agreed on regular monitoring of the GCR intensity as a function of latitude, by installing a portable device aboard the German research vessel Polarstern in 2012. The vessel is ideally suited for this research campaign because it covers extensive geomagnetic latitudes (i.e., goes from the Arctic to the Antarctic) at least once per year. Since the installation aboard the vessel, 12 latitude scans were performed, allowing us to compute the so-called yield function by experimental means presented in this contribution.

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