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Neutron monitor measurements on the German research vessel Polarstern

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Neutron Monitors (NM) and Muon Telescopes (MT) are ground-based devices to measure the variation of galactic cosmic ray intensities. Since their measurements are influenced by the variable Earth magnetic field and the atmospheric conditions close to its position a detailed knowledge of the instrument sensitivity with geomagnetic latitude (rigidity) and atmospheric pressure is essential. The rigidity dependence is determined experimentally by utilizing several latitude scans. The Polarstern is currently one of the most sophisticated polar research vessels in the world that spends almost 310 days a year at sea. Between November and March it usually sails to and around the waters of the Antarctic, while the northern summer months are spent in Arctic waters. In other words the vessel scans twice a year the rigidity range below the atmospheric threshold and above 10 GV. One mini neutron monitor, constructed by the North-West University campus Potchefstroom, and a MT, constructed by DESY Zeuthen, are measuring the variation of galactic cosmic rays with respect to the position of the vessel. In this presentation the measurements over the last years are presented.