



Contribution ID: 387

Type: **Poster contribution**

Forbush decreases detected by the Muonca muon telescopes on 13 September and 22 December 2014

Tuesday, 4 August 2015 16:00 (1 hour)

Muon rate variations during Forbush decreases registered by the Muonca muon detector have been studied. We discuss the Forbush events which occurred on 13 September and 22 December 2014. Since April 2014, muon telescopes located at State University of Campinas, Brazil, inside the South Atlantic Anomaly, has been recording the flux of single muons. The Muonca experiment consists of four modular detectors arranged in mode to register the flux of vertical and 45 degrees inclined muons from East and West. The modular detector uses a slab of plastic scintillator and a 127 mm diameter photocathode photomultiplier inside a truncated trapezoidal box. Its measured muon counting efficiency is 96.8%. We present the experiment setup, its calibration and a comparative analysis with neutron monitor data and the New Tupi muon monitor. The data of the Muonca help to extend the knowledge about Forbush decreases to energies beyond the neutron monitor region.

Collaboration

– not specified –

Registration number following "ICRC2015-I"

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