

Cosmic Ray Shadow of the Sun and Moon

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Abstract. The Soudan 2 Detector, a deep underground tracking calorimeter, has monitored the cosmic ray shadow of the sun and moon in deep underground muons from January 1989 through the present day. The moon shadow provides a measured upper limit for the detector angular resolution.

The sun shadow shows both a long-term variation with the 11-year solar cycle and a short term variation that correlates with both solar sunspot and magnetic field measurements and satellite measurements of the Interplanetary Magnetic Field.