

# Solar Energetic Particles (SEP), Solar Modulation and Space Radiation: New Opportunities in the AMS-02 Era #2

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## Response Functions of South Pole Neutron Monitors

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The South Pole is an ideal location for the detecting solar energetic particles because of its low geomagnetic cutoff and high altitude. Neutron Monitors have operated at the South Pole for many decades, and they are able to distinguish between Solar and Galactic cosmic ray variations. They are excellent devices for observing space weather. Physicists at the University of Wisconsin-River Falls, a small undergraduate, liberal arts university, recently assumed a leadership role in the operation and maintenance of the South Pole monitors. To undertake a complementary analysis of neutron monitor data with data from other cosmic ray experiments at the South Pole, an updated Monte Carlo simulation is needed, one that includes not only the monitors, but which also includes the environment like snow cover and buildings. We have written a new simulation using Fluka, which includes the monitors and some of the structures at the Pole. We present the first results for the response functions of the South Pole neutron monitors from the new simulation.

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