

MEASUREMENT OF SECONDARY MUON ANGULAR DISTRIBUTIONS

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Project GRAND is an array of proportional wire planes composed of 64 stations with each station containing eight planes of proportional wire planes and a 50 mm steel plate. The proportional wire planes together with the steel absorber allow a measurement of the angle and identity of the single muon tracks. Of the two data-taking triggers, one is for single tracks. Since the rate of single muon tracks at sea level above the muon energy threshold of the experiment (0.1 GeV) is substantial, good statistics are available by accumulating several years of data. A map in right ascension and declination is obtained as well as one in a sun-centered coordinate system in order to study, separately, the solar and sidereal effects. Regions of higher-than-normal and lower-than-normal muon angles are observed which, though small in absolute magnitude, are many standard deviations in statistical significance.