

PROJECT GRAND's STATUS: AN ARRAY OF PROPORTIONAL WIRE CHAMBERS

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Project GRAND is an extensive air shower array of proportional wire chambers. It has 64 stations in a 100 m x 100 m area; each station has 8 planes of proportional wire chambers with a 50 mm steel absorber plate above the bottom two planes. The eight planes, each 1.25 square meters in area, allow an angular measurement for each track to 0.25-deg in each of two orthogonal projections; the steel absorber plate allows a measurement of the identity of each secondary track with 96% accuracy. Two data-taking triggers allow data to be simultaneously taken for extensive air showers (multiple station hits at about 1 Hz) and single muons (single tracks of identified muons at 2.2 KHz). Eight on-line computers pre-analyze the single track data and store the results on magnetic tape in compacted form with a minimum of computer dead-time. One additional computer reads the data from the shower triggers and records this raw data on a separate magnetic tape with no pre-analysis.