

IMPROVEMENTS IN THE DETECTION OF MUONS WITH THE KASCADE CENTRAL DETECTOR

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For an improved detection of cosmic ray muons with a threshold of 2.4 GeV the KASCADE central detector has been upgraded with a new detector component set-up by limited streamer tubes. Together with the already existing multiwire proportional chambers they enable a study of the muonic component of Extensive Air Showers at higher particle densities. Due to the pad readout system of the streamer tubes ambiguities in the muon track reconstruction, resulting from limitations of the readout system of the multiwire proportional chambers, can be resolved. Additionally the sensitive area for muon detection is increased to 82 % of the area of the central detector by the new layer of streamer tubes, with a good spatial resolution in the parts not covered by the multiwire proportional chambers. The set-up of the improved detector system and the reconstruction procedures are described and demonstrated by first measurements.