

OBSERVATION OF HIGH ENERGY ATMOSPHERIC NEUTRINOS WITH AMANDA

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The detection of atmospheric neutrinos is a crucial test of the performance of the AMANDA neutrino telescope. The main challenge is the proof of background rejection: the unambiguous identification of up-going muons from the 10^6 times larger background of down-going muons. Other important aspects are the verification of a sufficiently high signal efficiency and the understanding of systematic uncertainties, such as vertical structures in the optical properties of the deep Antarctic ice. About 10^9 events were collected with the 10-string array AMANDA-B10 in the year 1997 (130 days effective live-time). Several independent analyses have demonstrated the capability to extract more than 200 neutrino events from this sample. These results will be presented.