

Abstract Submitted  
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**Study of High pT Muons with IceCube** LISA GERHARDT, Lawrence Berkeley National Laboratory, ICECUBE COLLABORATION — Study of High pT Muons with IceCube Muons with a large transverse momentum (pT) are produced in cosmic ray air showers via semileptonic decays of heavy quarks and the decay of high pT kaons and pions. These high pT muons will have a large lateral separation from the shower core. IceCube, a neutrino telescope consisting of a three-dimensional array of photodetectors buried in the ice of the South Pole and a surface air shower array, is well suited for the detection of high pT muons. The surface shower array can determine the energy, location and direction of the cosmic ray air shower while the in-ice array can do the same for the high pT muon. This makes it possible to measure the average separation as well as the shape of the pT spectrum of these muons which can be used to probe the composition of high energy cosmic rays.

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