

Abstract Submitted
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Uniformity Studies of the ATLAS Electromagnetic Calorimeter using Cosmic Ray Muons R. CAPUTO, SUNY Stony Brook, ATLAS COLLABORATION¹ — The completed Atlas detector was used to record cosmic ray data in the fall of 2008. For the first time, the inner detector, calorimeters and muon systems were used together to identify the cosmic rays. Over 200 million events were recorded using specially designed triggers. We present measurements of the most probable value (MPV) of the energy deposited by cosmic ray muons in the calorimeter. The MPV scales linearly with the path and logarithmically with the incident energy. Several different calorimeter cluster sizes were used to determine which one gave the best combination of unbiased energy measurement and limited noise. We present these studies and use the resulting energy to test the uniformity of the calorimeter response. The upper limit on non-uniformity was observed to be less than 1% over the given acceptance.

¹On behalf of ATLAS Liquid Argon Calorimeter Group

Jaehoon Yu
Univ. of Texas at Arlington

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