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## Validation of the ATLAS Hadronic Calibration in scheme in Beam Tests (End-Cap)

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### Summary

The high granularity of the ATLAS calorimeter and the large number of expected particles per event require a clustering algorithm that is able to suppress noise and pile-up efficiently. Therefore the topo cluster reconstruction is the essential first step in the hadronic calibration. The identification of electromagnetic components within a hadronic cluster using cluster shape variables is the next step in the hadronic calibration procedure. Finally the energy density of individual cells is used to assign the proper weight to correct for the invisible energy deposits of hadrons due to the non-compensating nature of the ATLAS calorimeter and to correct for energy losses in material non instrumented with read-out.

The weighting scheme employs the energy density in individual cells. Therefore the validation of the MC simulation, which is used to define the weighting parameters and energy correction algorithms, is an essential step in the hadronic calibration procedure.

Pion data, obtained in a beam test corresponding to the pseudorapidity region  $2.5 < |\eta| < 4.0$  in ATLAS and in the energy range  $E \leq 200$  GeV, have been compared with MC simulations, using the full ATLAS hadronic calibration procedure.

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