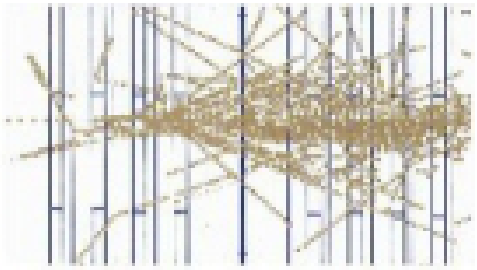

Contribution ID: **54** Type: **oral presentation**

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

Thursday, May 29, 2008 4:50 PM (10 minutes)

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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Track Classification: Simulation