

Status of Simulation Activities

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- GEANT4 physics validation:
 - stand-alone HEC testbeam
 - combined testbeam of EMEC and HEC
- Further plans on the physics validation
- Other simulation activities:
 - new HEC geometry for ATLAS
 - simulations of high-luminosity beam tests at IHEP



HEC Stand-Alone Testbeam

- Article “GEANT4 Physics Evaluation with Testbeam Data of the ATLAS Hadronic End-Cap Calorimeter”
 - version 6.2p2
 - submitted to NIM on the 10-th of October, 2005
 - manuscript number: NIMA-D-05-00372
- Last round of simulations with version 7.0p1 (spring 2005)
- No new simulations for the physics validation are foreseen (at least, now)



Combined Testbeam of EMEC and HEC

- Impact point J and 8 neighbours (± 5 mm in X/Y)
- GEANT4
 - version 6.2p2
 - samples with calibration hits
 - 60 GeV electrons: 10, 30, 100 and 700 μm range cut
 - pion energy scans (LHEP and QGSP): 700 μm range cut
 - reconstruction (clusterization)
- GEANT3 (fully re-simulated after failure of the hec-data disk)
 - two sets of cuts
 - electron and pion energy scans
 - no reconstruction (clusterization) yet
- Analysis and comparison with the experiment — going on



Further Physics Validation?

- Mail from T. Carli
(participation in the physics validation efforts of LCG project)
- Finish EMEC/HEC combined testbeam studies
- Combined EMEC/HEC/FCal testbeam?
- FLUKA for combined testbeams?



HEC Geometry for ATLAS Simulations

- To be tested with LArG4TBHEC package
- To be ready for the release 12.0.0

Simulations of High Luminosity Beam Tests

- First estimates of particle fluxes, based on GEANT3 simulations (presented at Gargnano)
- New code - being prepared
 - GEANT4
 - more realistic description (absorber, cryostat, HEC module)

