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The ATLAS Detector Simulation -an LHC challenge

Monday, 13 February 2006 17:30 (18 minutes)

The simulation program for the ATLAS experiment at CERN is currently in a full operational mode and integrated into the ATLAS's common analysis framework, ATHENA. The OO approach, based on GEANT4, and in use during the DC2 data challenge has been interfaced within ATHENA and to GEANT4 using the LCG dictionaries and Python scripting. The robustness of the application was proved during the DC2 data challenge. The Python interface has added the flexibility, modularity and interactivity that the simulation tool needs to tackle, in a common way, different full ATLAS simulations setups, test beams and cosmic ray studies. Generation, simulation and digitization steps were exercised for performance and robustness tests. The comparison with real data has been possible in the context of the ATLAS Combined Test Beam (2004) and ongoing cosmic ray studies.

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