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Massive data processing for the ATLAS Combined Test Beam

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In 2004, a full slice of the ATLAS detector was tested for 6 months in the H8 experimental area of the CERN SPS, in the so-called Combined Test Beam, with beams of muons, pions, electrons and photons in the range 1 to 350 GeV. Approximately 90 million events were collected, corresponding to a data volume of 4.5 terabytes. The importance of this exercise was two-fold: for the first time the whole ATLAS software suite was used on fully combined real data. Besides, a novel production infrastructure was employed for the reconstruction of the real data as well as for a massive production of simulated events.

The talk will be focused on the Combined Test Beam production system. The system is comprised of two components for two distinct tasks: reconstruction of real data and production of simulated samples. Large scale real data reconstruction was performed twice in 2005 at CERN. In both cases a sizable sample of about 400 good runs, for a total of about 25 million events, were processed. Also in 2005, the Monte Carlo production was for the first time performed on the grid, with the simulation of about 4 Million events. Reprocessing of real data, as well as Monte Carlo production on the grid, are already planned for the year 2006.

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