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Prompt data reconstruction of the ATLAS experiment

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Abstract: The ATLAS experiment at the LHC collider recorded more than 3 fb-1 data of pp collisions at the center of mass energy
of 7 TeV by September 2011. The recorded data are promptly reconstructed in two steps at a large computing farm at CERN to provide fast access to high quality data for physics analysis. In the first step a subset of the collision data corresponding to 10 Hz is processed in parallel with data taking. Data quality, detector calibration constants and beam spot position are determined using the reconstructed data in 36 hours. In the second step the whole recorded data are processed with the updated parameters. The LHC largely increased the instantaneous
luminosity and the number of interactions per bunch crossing in 2011 and the data recording rate by ATLAS exceeds 400 Hz. To cope with these challenges the performance and reliability of the ATLAS reconstruction software have been improved.
In this presentation we describe how the prompt data reconstruction system quickly and stably provides high quality data to analyzers

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