

ATLAS detector upgrade plans and perspectives

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With the LHC collecting first data at 7 TeV, plans are already advancing for a series of upgrades leading eventually to about five times the LHC design-luminosity some 10 years from now in the high luminosity LHC (HL-LHC) project. The goal is to extend the data set from about 300 fb⁻¹ proposed for LHC running to 3000 fb⁻¹ by around 2030. Coping with the high instantaneous and integrated luminosity will require many changes to the ATLAS detector. ATLAS is planning a multi-phase detector upgrade procedure, starting with initial modifications of the existing detector setup as early as 2013 towards large scale replacements of detector components during later shut down periods. The designs are developing rapidly for an all-new inner-tracker, big changes in the calorimeter and muon systems, as well as improved triggers. This talk summarises the environment expected at the HL-LHC and the status of the improvements to the ATLAS detector.

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