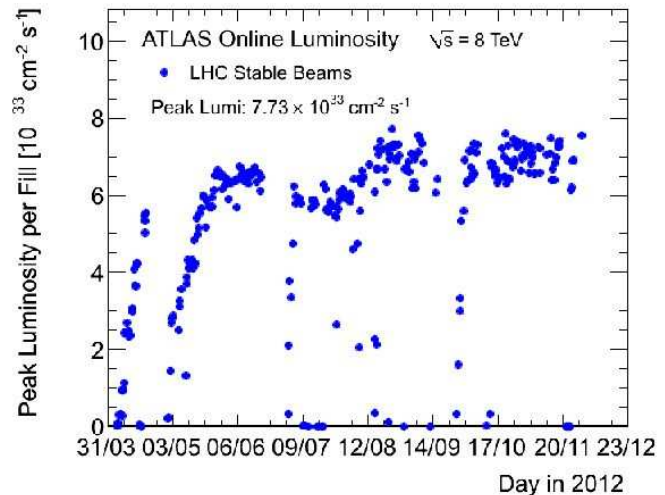
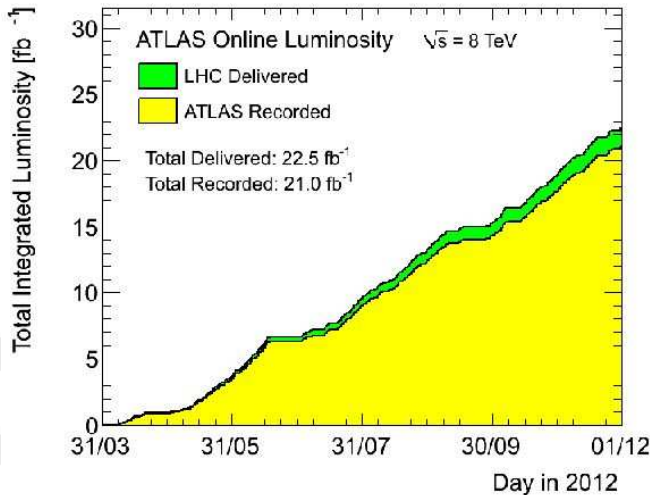


PHYSIKALISCHES KOLLOQUIUM

AM 21. JANUAR 2013 UM 17 UHR C.T.

IM GROßEN HÖRSAAL



THE CHALLENGES OF OPERATING THE LHC AND ATLAS EXPERIMENT -- PERFORMANCE OF THE ACCELERATOR AND ATLAS DETECTOR IN THE FIRST 3 YEARS OF DATA TAKING

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By the end of 2012 the Large Hadron Collider LHC at CERN will have delivered $\sim 30 \text{ fb}^{-1}$ to the ATLAS and CMS experiments since the start of physics data taking in spring 2010; data taking will finish with running the LHC for proton Pb-ion collisions in Jan/Feb 2013 before then going into a 18 months upgrade and consolidation phase from March next year.

This talk will review the first 3 years of operation. The performance of both the accelerator and the ATLAS detector will be discussed, high-lighting the challenges encountered in running a experiment of unprecedented size and complexity for many months of uninterrupted data taking and achieving the recent physics results.

In the second part of the talk, an outlook on data taking and operations after the shut-down period, from 2015 on, will be given, covering especially the changes related to the planned running of LHC at 6.5 TeV beam energy and 25ns instead of 50ns bunch spacing. Upgrades and improvements planned for the ATLAS detector during the shutdown will also presented.