

Abstract Submitted
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Top Physics in ATLAS MATT DOBBS¹, Lawrence Berkeley National Lab , ATLAS COLLABORATION — The LHC can be considered as a top-factory, with about 10 million $t\bar{t}$ events produced in one year of running at low luminosity. This large data set will allow very precise measurements of the properties of the top quark, which may also reveal New Physics. The mass of the top quark will be measured with a precision of about 1 GeV. The top quark Yukawa coupling can be determined with a precision of better than 10%. $t\bar{t}$ spin correlations can be observed and used to study anomalous couplings or CP violation. Heavy resonances decaying to $t\bar{t}$ pairs could be detected with masses up to 3 TeV. Rare decays of the top quark can be probed for branching ratios as small as 10^{-5} . In addition, the detailed study of three different mechanisms of electroweak single top production will yield a wealth of information, including precision measurements of V_{tb} and of the W and top polarisations, and searches for anomalous couplings. Besides all these interesting possibilities, top events will provide an exceptional tool for the first commissioning studies of the ATLAS detector.

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