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Highlights on top quark physics with the ATLAS experiment at the LHC

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The large top quark samples collected with the ATLAS experiment at the LHC have yielded measurements of the production cross section of unprecedented precision and in new kinematic regimes. They have also enabled new measurements of top quark properties that were previously inaccessible, enabled the observation of many rare top quark production processes predicted by the Standard Model and boosted searches for flavour-changing-neutral-current interactions of the top quark, that are heavily suppressed in the SM. In this contribution the highlights of the ATLAS top quark physics program are presented, as well as projections of the expected sensitivity after the High Luminosity phase of the LHC.

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