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Top quark mass and properties with the ATLAS detector

The top-quark mass is one of the key fundamental parameters of the Standard Model that must be determined experimentally. Its value has an important effect on many precision measurements and tests of the Standard Model. The Tevatron and LHC experiments have developed an extensive program to determine the top quark mass using a variety of methods. In this contribution, the top quark mass measurements by the ATLAS experiment are reviewed. These include measurements in two broad categories, the direct measurements, where the mass is determined from a comparison with Monte Carlo templates, and determinations that compare differential cross-section measurements to first-principle calculations. The exceptionally large dataset collected by the ATLAS detector at the highest proton-proton collision energies provided by the LHC also enables precision testing of theoretical predictions using an extensive sample of top quark events. New results on top-quark properties including tests of lepton-flavour universality are also shown.

Secondary track

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