

Measuring top-quarks with the highest precision and at new and record energies using the ATLAS detector at the LHC

Content

The LHC produces a vast sample of top quarks - the heaviest known elementary particles. I will review three measurements in which I had a leading role within the ATLAS Collaboration. The first measurement, chosen as the ATLAS highlight at CERN's Courier in September 2022, is the most precise measurement of the inclusive top quark pair production cross-section, $\sigma(t\bar{t})$, at $\sqrt{s} = 5.02$ TeV. In addition, I will present the recent measurement of $\sigma(t\bar{t})$ at the record centre-of-mass energy of 13.6 TeV using the data collected in August 2022. I will summarise with the hot off the press and first ever measurement of the t-channel single top quark production in pp collisions at $\sqrt{s} = 5.02$ TeV, released one week ago for the LHCP Conference.

Summary

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