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New results on $t\bar{t}W$ and 4-top production with the ATLAS experiment

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The ATLAS experiment has performed extensive searches for rare Standard Model processes involving top quarks. In this contribution two recent highlights of this programme are presented. The top-quark pair production in association with a W boson is a difficult process to calculate and model and is one of the leading sources of same-sign and multi-lepton events. To improve our understanding of this process, a new inclusive and differential measurement of this process in events with 2 or 3 leptons was performed, as well as measurements of the ratio of ttW events with a positively and a negatively charged W-boson. The result confirms the slight tension observed in previous measurements. The 4-top production process, with a cross section of approximately 12 fb, is nearly one order of magnitude still. A re-analysis of the run 2 dataset is performed in the same-sign and multi-lepton channel, with several improvements in the event selection, the data-driven background estimate and the final discriminant. The cross section measurement of 23 +/- fb, is presented, as well as bounds on the top quark Yukawa coupling and on EFT operator coefficients affecting 4-top production.

Is this abstract from experiment?

Yes

Name of experiment and experimental site

ATLAS

Is the speaker for that presentation defined?

No

Details

N/A

Internet talk

Maybe

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