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Searches for rare top quark production and decay processes with the ATLAS experiment

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Run 2 of the LHC has witnessed the observation of many rare top quark production processes predicted by the Standard Model and has boosted searches for flavour-changing-neutral-current interactions of the top quark, that are heavily suppressed in the SM. In this contribution the highlights are shown of searches by the ATLAS experiment for rare processes involving top quarks. Results are presented for several associated top quark production processes of top quarks with Standard Model gauge bosons. The recent observation of associated production of a single top quark with a photon completes the list of processes and adds sensitivity to the EW couplings of the top quark. ATLAS furthermore reports strong evidence for the four-top-production process. Finally, results are presented of searches for flavour-changing-neutral-current processes involving top quarks. Searches in the full run 2 data set have been performed for tqg, tqgamma, tqZ and tqH interactions, with bounds exceeding previous limits by large factors.

Is this abstract from experiment?

Yes

Name of experiment and experimental site

ATLAS

Is the speaker for that presentation defined?

Yes

Details

Chenliang Wang
chenliang.wang@cern.ch (Shanghai Jiao Tong University (CN), CPPM, Aix-Marseille Université, CNRS/IN2P3 (FR))

Internet talk

Maybe

Authors: WANG, Chenliang (Shanghai Jiao Tong University (CN), CPPM, Aix-Marseille Université, CNRS/IN2P3 (FR)); VARNES, Erich Ward (University of Arizona (US))

Presenter: WANG, Chenliang (Shanghai Jiao Tong University (CN), CPPM, Aix-Marseille Université, CNRS/IN2P3 (FR))

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