



Contribution ID: 241

Type: not specified

## Search for $t\bar{t}$ Resonances at CMS

*Thursday, August 6, 2015 3:15 PM (15 minutes)*

We present the legacy search for resonant top quark pair production, using proton-proton collision data collected with the CMS detector at the CERN LHC at a center-of-mass energy of 8 TeV. The search is performed by measuring the invariant mass distribution of the top-quark pair and testing for deviations from the expected Standard Model background. Final states with zero, one or two leptons are considered and the selection is optimized accordingly, taking into account the high Lorentz boost of the top quarks at high invariant masses. The results are presented in the form of mass and cross section limits on three types of new physics models: both a narrow and wide  $Z'$  boson as well as a Randall-Sundrum Kaluza-Klein gluon. These boosted top quark signatures can be identified and reconstructed through the use of jet substructure and subjet b-tagging algorithms. Thus, we further present studies of boosted top-quark tagging at CMS for Run 2 collision events at 13 TeV center-of-mass energy, including new improvements to the top-tagging algorithms.

### Oral or Poster Presentation

Oral

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**Session Classification:** BSM Physics

**Track Classification:** BSM Collider