

## Prospects for studying the $t\bar{t}$ invariant mass spectrum and the $t\bar{t}$ spin correlations at CMS

The top quark was discovered at the Tevatron in 1995. For the last decade the study of its properties has been a major theme in the worldwide experimental high energy physics program. The advent of the LHC opens up a new era in top quark physics; because of the large  $t\bar{t}$  cross-section and the high luminosity, the LHC can be thought of as a top factory.

Here we report on prospects for studying of  $t\bar{t}$  invariant mass spectrum and the  $t\bar{t}$  spin correlation in  $pp$  collisions at a center of mass of 10 TeV with the CMS detector.

**Author:** KLIMA, Boaz (Fermi National Accelerator Lab. (Fermilab)-Unknown-Unknown)

**Presenter:** KLIMA, Boaz (Fermi National Accelerator Lab. (Fermilab)-Unknown-Unknown)

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