

Expectations for first pair-production of top-quarks in the semi-leptonic channel in CMS at $\sqrt{s} = 10$ TeV

The top quark will be a fundamental element of the early physics program at the Large Hadron Collider (LHC). Given the complex signature of this “most exotic” of all known SM particles, the pair production of top quarks will be a crucial instrument for the commissioning the LHC experiments’ tools for physics analysis. Only when the first top-quark signal has been established will the experiments be able to use it to further probe the standard model, and to begin the search for new physics that the LHC is almost certain to deliver. We will discuss the plans and analysis strategies of CMS to pursue this physics program, and show the expected performance of the experiment with a focus on an early cross-section measurement in the channel where the W boson from one top quark decays into leptons, while the other decays into quarks.

Primary author: WYSLOUCH, Boleslaw (MIT)

Presenter: Dr CHENG, Teh Lee (University of Bristol)

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