

Abstract Submitted
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Top pair production in the channel $t\bar{t} \rightarrow W(e/\mu + \nu_{e,\mu})W(\tau_{\text{had}} + \nu_{\tau_{\text{had}}})bb$
at ATLAS JACOB SEARCY, University of Oregon, ATLAS COLLABORATION
— The measurement of the $t\bar{t}$ cross section in the $t\bar{t} \rightarrow l + \tau + X$ channel is an important test of the Standard Model. If the charged Higgs Boson exists as required by MSSM, and its mass is lower than that of top quark mass, then the top quark can have a significant branching ratio to $t \rightarrow H^\pm + b$. For large $\tan\beta$ the charged Higgs decays mainly to $\tau\nu$, making this channel sensitive to beyond the standard model physics. Also, the busy environment created by top quark decays will be an important test of ATLAS's τ particle identification. The status of this measurement using a boosted decision tree for τ identification with $7TeV$ ATLAS data will be presented.

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