Contribution ID: **546** Type: **Poster Sessions**

Search for violation of Lorentz invariance in top quark pair production and decay

Saturday, 7 July 2012 18:00 (1 hour)

Using data collected with the D0 detector at the Fermilab Tevatron Collider, corresponding to 5.3 fb-1 of integrated luminosity, we search for violation of Lorentz invariance by examining the ttbar production cross section in lepton+jets final states. We quantify this violation using the standard-model extension framework, which predicts a dependence of the ttbar production cross section on sidereal time as the orientation of the detector changes with the rotation of the Earth. Within this framework, we measure components of the matrices (c_Q)*{mu nu 33} and (c_U)*{mu nu 33} containing coefficients used to parametrize violation of Lorentz invariance in the top quark sector. Within uncertainties, these coefficients are found to be consistent with zero.

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