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Measurement of the inclusive top pair production cross section using Multivariate analysis techniques

We present the measurement of the inclusive top pair production cross section in proton anti-proton collisions at 1.96 TeV employing the full RunII data (9.7/fb) collected with the D0 detector at the Fermilab Tevatron Collider. We consider the final state of the top quark pair containing one electron or muon and at least two jets. We select variables according to statistical tests and separate the signal from the background by the application of TMVA Boosted Decision Trees (BDT). The inclusive cross section is derived by a nuisance fit to the BDT discriminant output distribution and combined with results in the dilepton channel. Results are compared to predictions by the standard model.

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