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Measurement of the Top Quark Mass with an *in situ* $W \rightarrow q\bar{q}$ Calibration at CDF JEAN-FRANCOIS ARGUIN, University of Toronto, CDF COLLABORATION — We present a preliminary measurement of the top quark mass using data from $p\bar{p}$ collisions at $\sqrt{s} = 1.96$ TeV collected by the CDF detector. We select $t\bar{t}$ events where one W boson decays leptonically and the other hadronically. The observed invariant mass of the hadronic W boson decay is used to reduce the largest systematic uncertainty arising from the jet energy scale. The top quark mass and hadronic W boson mass distributions reconstructed in data are compared to Monte Carlo expectations to determine simultaneously the top quark mass and the jet energy scale.

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