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Measurement of the top quark mass using the matrix element analysis technique in the lepton + jets channel with in situ W calibration at CDF DARYL HARE, Rutgers University, CDF COLLABORATION — We present a top quark mass measurement from $p\bar{p}$ collisions at CDF. We use events from $p\bar{p}$ to $t\bar{t}$ in the lepton+jets channel requiring one charged lepton, high missing transverse energy and at least 4 jets, at least one of which must be identified as a b-jet. The top quark mass is extracted with a 2D unbinned likelihood fit using per-event probabilities calculated using leading-order signal ($t\bar{t}$) and background (W+jets) matrix elements. The probabilities are a function of both the top quark mass and the energy scale of the calorimeter jets (JES) which is measured in-situ by constraining the invariant mass of two hadronic jets to the W boson mass.

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