

Matrix Element Measurement of the Top Quark Mass in Hadronic Tau + Jets Events

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We use an unbinned likelihood fit, as used in previous precision top quark mass measurements, with events from lepton + jet top quark decays where the lepton has been identified as a hadronically decaying tau. We use ppbar collisions at 1.96 TeV at CDF. Events require a single lepton identified as a hadronic tau, missing E_T , and 4 jets of which at least one must be tagged as a b jet. The likelihood fit is based on per-event probabilities calculated from leading-order signal ($t\bar{t}$) and background (W +jets) matrix elements. Our goal is to directly identify this final state and provide a top quark mass measurement in this decay channel.

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