Measurement of the Top Quark Mass using Events with a MET+Jets Signature

JIAN TANG, University of Chicago, CDF COLLABORATION — A top quark mass measurement using the so-called “MET+Jets” events are presented. The events used are triggered by the MULTI_JET trigger and have significant missing Et. After a set of clean-up cuts, the events that pass the selection mainly have the signature of “lepton + jets” channel of ttbar events but either have one lepton escaping undetected or have a lepton that doesn’t pass the usual cuts of tight lepton or loose muon, which makes these events “orthogonal” to the usual high-Pt-lepton triggered events in the ttbar “lepton + jets” channel and its “all-hadronic” channel. A template method is used for this analysis which compares the data events with a set of Monte Carlo simulated samples using 3-dimentional kernel density estimation (KDE) technique, and a maximum-log-likelihood method is used for fitting the final top quark mass. This is the first time these events are used in top quark mass measurement of CDF Run II and we see comparable number of events of this final state compared to the usual “lepton + jets” channel. This analysis will give complementary and independant result to the CDF top quark mass measurements.

Eric James
FNAL

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