Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Study of differential distributions of top quarks JIRI KVITA, Charles University, Prague, D0 COLLABORATION — The study of kinematics of top quark pairs produced at Fermilab Tevatron Collider can test Standard Model production and decay of the system or look for new physics. Differential distributions can validate current generators and their level of description of the top quark pairs and provide a detailed window on QCD dynamics of a unique heavy diquark system at large scales. We present measurements of differential distributions of top quarks produced in pairs in $p\bar{p}$ collisions recorded by the DZero experiment. Events containing a high-p_T lepton, large missing transverse energy, and four or more jets were chosen from the 0.9 fb^{-1} Run IIa data sample. At least one of the jets was required to be identified as a b jet. A constrained kinematic fit associated these decay products with the individual top quarks. The measured spectra, binned in several observables, are compared to those obtained from the Monte Carlo simulation. We focus on the transverse momentum of the top quark and the top pair system as well as the system invariant mass and the azimuthal decorrelation between top quarks.

Graham Wilson
University of Kansas

Date submitted: 10 Jan 2008 Electronic form version 1.4