

Abstract Submitted
for the APR05 Meeting of
The American Physical Society

Use of particle ID in reconstructing hadronic B decays at CDF

PAOLA SQUILLACIOTI, INFN Pisa and University of Siena, CDF COLLABORATION — The CDF II detector provides two means of particle identification: dE/dx for charged tracks passing through the central outer tracker (COT), and particle time-of-flight (TOF) measured with by a system of 216 scintillating bars surrounding the outer radius of the COT. The two measurements are complementary. The TOF system is most effective for low transverse momentum tracks ($p_T < 2 \text{ GeV}/c$) and dE/dx is most effective for intermediate transverse momenta ($p_T > 2 \text{ GeV}/c$). By combining information in a single optimized quantity, a pi/k separation at least 1.5 sigma is obtained for track momenta up to 5 GeV, with larger values in the lower momentum range. The applications of this PID algorithm at CDF helps the extraction of clean hadronic B signals, disentangling the contribution of reflections and allows determination of particle composition of track samples.

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Date submitted: 11 Feb 2005

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