Abstract Submitted
for the APR06 Meeting of
The American Physical Society

Forward Proton Detection at DØ MURILO RANGEL, Centro Brasileiro de Pesquisas Fisicas, D0 COLLABORATION — Quantum Chromo-Dynamics (QCD) has been a very successful model describing the strong interaction, but its success has been limited primarily to the perturbative regime. About 40% of the total proton-antiproton cross section at the Tevatron consists of the non-perturbative processes of elastic and diffractive scattering. These processes are better described by the phenomenology of a color singlet exchange of a particle with quantum numbers of the vacuum called the pomeron (Regge theory). The D0 experiment (http://www-d0.fnal.gov) is currently taking data with a forward proton detector (FPD) to better study this process. The FPD data is being used to study the diffractive phenomenology, which has attracted both experimental and theoretical attention. This data provides a unique opportunity to study many topics in the diffractive regime, for instance events which contain a double pomeron exchange. This talk will present FPD data acquired during the last year, focusing on the methods for eliminating background and noise and emphasizing the detector capabilities to explore this interesting physics regime.

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Date submitted: 14 Jan 2006 Electronic form version 1.4