



SPEAKER: Dr. Guennadi Borissov (Lancaster University (GB))

TITLE: **Matter-Antimatter Differences using Muons: D0 Result on anomalous Dimuon Charge Asymmetry using Full Tevatron Data Set**

DATE: Tue 29/10/2013 11:00

PLACE: Main Auditorium

ABSTRACT

We measure the inclusive single muon charge asymmetry and the like-sign dimuon charge asymmetry in p-pbar collisions using the full data set of 10.4 fb⁻¹ collected with the D0 detector at the Fermilab Tevatron.

The standard model predictions of the charge asymmetries induced by CP violation are small in magnitude compared to the current experimental precision, so non-zero measurements could indicate new sources of CP violation.

The measurements differ from the standard model predictions of CP violation in these asymmetries with a significance of 3.6 standard deviations. These results are interpreted in a framework of B meson mixing within the CKM formalism to measure the relative width difference $\Delta\Gamma_d / \Gamma_d$ between the mass eigenstates of the B0 meson system, and the semileptonic charge asymmetries a_{sl}^d and a_{sl}^s of the B0 and B0_s mesons respectively.