Prospects of heavy quark physics in run II with the DØ detector

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Abstract

After a successful Run I, DØ is poised for an encore performance in Run II. This talk summarizes the essential features of the DØ upgrade that involve a central magnetic field, a new tracking system, upgraded muon detection, and enhancements to muon and calorimeter electronics and the data acquisition system. The top quark physics goals for the Run II are outlined along with issues affecting the precision measurement of top quark mass and single top quark production. The prospects and issues determining the B physics capabilities of the DØ in Run II are addressed briefly. A preliminary study of observing $B_d^0 - \overline{B}_d^0$ and $B_s^0 - \overline{B}_s^0$ mixing with the upgraded DØ detector is also presented.