

Abstract Submitted
for the APR07 Meeting of
The American Physical Society

Measurement of the B_s^0 Width Difference and Mixing Phase in the Decay $B_s^0 \rightarrow J/\psi\phi$ AVDHESH CHANDRA, University of California, Riverside, D0 COLLABORATION — In the standard model (SM), the light (L) and heavy (H) mass eigenstates of the mixed (B_s^0, \bar{B}_s^0) system are expected to have a sizable mass and decay width difference, $\Delta M \equiv M_H - M_L$ and $\Delta\Gamma \equiv \Gamma_L - \Gamma_H$. The CP violating phase, ϕ_s , defined as the relative phase of the off-diagonal elements of the mass and decay matrices in the $B_s^0 - \bar{B}_s^0$ basis, is predicted to be small. From an analysis of the “untagged” $B_s^0 \rightarrow J/\psi\phi$ time-dependent angular distributions, we measure the average lifetime ($\bar{\tau}$), $\Delta\Gamma$, and ϕ_s . To improve the sensitivity of the measurement, we have extended this analysis by using flavor tagging information when available.

Ulrich Heintz
Boston University

Date submitted: 09 Jan 2007

Electronic form version 1.4