Abstract Submitted
for the APR07 Meeting of
The American Physical Society

Study of the rare decays $B^0 \to D_s^{(*)+}(\pi^-/\rho^-)$ and $B^0 \to D_s^{(*)-}K^{(*)+}$ at the BaBar experiment ARITOKI SUZUKI, LBNL, BABAR COLLABORATION — We report on our study of B^0 mesons decaying into the final states $D_s^{(*)+}(\pi^-/\rho^-)$ and $D_s^{(*)-}K^{(*)+}$ using a sample of 384 million $\Upsilon(4S) \to B\bar{B}$ events. The events have been collected with the BaBar detector at the PEP-II asymmetric-energy e^+e^- storage ring, located at the Stanford Linear Accelerator Center. We exclusively reconstruct the modes $B^0 \to D_s^{(*)+}(\pi^-/\rho^-), B^0 \to D_s^{(*)-}K^{(*)+}, D_s^{*+} \to D_s^+\gamma$, $D_s^+ \to \phi\pi^+$, $\bar{K}^{*0}K^+$, and $\bar{K}^0K^+$,$\rho^- \to \pi^-\pi^0$,and $K^{*+} \to \bar{K}^0\pi^+$, $K^+\pi^0$, and measure their branching fractions. These results help in determining the CP asymmetry parameter $\sin(2\beta+\gamma)$ in the decays $B^0 \to D^{(*)+}(\pi^-/\rho^-)$ and provide constraints on long-distance strong-interaction effects in rare B decays.

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Date submitted: 10 Jan 2007 Electronic form version 1.4