

Abstract Submitted
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Aspects of the $\sin 2\beta$ measurement specific to the decay mode $B^0 \rightarrow J/\psi K_L^0$ EMILIE MARTIN, University of California at Irvine, BABAR COLLABORATION — We present the details of the $\sin 2\beta$ measurement that are specific to the decay mode $B^0 \rightarrow J/\psi K_L^0$, using a sample of 384 million $\Upsilon(4S) \rightarrow B\bar{B}$ events, collected by the BaBar detector at the PEP-II asymmetric-energy B Factory. We use several parameters for the $\sin 2\beta$ fit that are unique to the $B^0 \rightarrow J/\psi K_L^0$ decay. The relative fractions for signal and various inclusive J/ψ modes are input to the fit and are split by reconstruction type, J/ψ lepton decay type and tagging category. We also use the parameters of the PDFs to the ΔE shapes for signal and different background distributions derived from fits to the Monte Carlo events and split by reconstruction type and J/ψ lepton decay type.

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