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Study of CP violation in $B^0 \rightarrow \pi^0\pi^0K_S^0$ decay at BaBar MAHALAXMI KRISHNAMURTHY, University of Tennessee, BABAR COLLABORATION — We present the measurement of the time-dependent CP asymmetry for the neutral B -meson decay into the $CP = +1$ final state $K_S^0\pi^0\pi^0$. We use a sample of approximately 227 million B -meson pairs recorded at the $\Upsilon(4S)$ resonance by the BaBar detector at the PeP-II B -Factory at SLAC. From a maximum likelihood fit we extract the mixing-induced CP -violation parameter $S = 0.84 \pm 0.71 \pm 0.08$ and the direct CP -violation parameter $C = 0.27 \pm 0.52 \pm 0.13$, where the first uncertainty is statistical and the second systematic. We compare intensities of subdecay modes with expectations from related B -decay modes

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