Abstract

The decay $\tau^+ \rightarrow K^+ K_S \nu_\tau$ has been studied using $4.3 \times 10^6 e^+e^- \rightarrow \tau^+ \tau^-$ events produced at a center-of-mass energy around 10.6 GeV at the PEP-II collider and studied with the BaBar detector. The mass spectrum of the $K^+ K_S$ system has been measured and the spectral function has been obtained. The measured branching fraction $BF(\tau^+ \rightarrow K^+ K_S \nu_\tau) = (0.739 \pm 0.011(stat) \pm 0.020(syst)) \times 10^{-3}$ is found to be in agreement with earlier measurements.