

Search for the Rare Decay $K_L \rightarrow \pi^0 \nu \bar{\nu}$ at E391a Experiment

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The E391a experiment at the KEK 12 GeV proton synchrotron is the first dedicated experiment for the $K_L \rightarrow \pi^0 \nu \bar{\nu}$ decay. The data is taken during three separate Runs. We just performed a blind analysis on the last Run. With $(3.48 \pm 0.25) \times 10^9$ K long decays, we found no candidate events. An upper limit of 6.8×10^{-8} was set on the branching ratio for the decay at the 90% confidence level.

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