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The KOTO experiment at J-PARC and the search for KL BRIAN BECKFORD, Univ of Michigan - Ann Arbor, KOTO COLLABORATION — The KOTO experiment has a goal to discover and measure the rate of the rare $K_L \rightarrow \pi^0\nu\overline{\nu}$ decay. This flavor changing neutral current (FCNC) decay proceeds through second-order weak interactions. The process occurs through a $\Delta S = 1$ transition and may be as expressed by the electroweak penguin and box diagrams. This decay is an ideal candidate to search for physics beyond the standard model. The SM prediction for the branching ratio is 3.0 x 10^{-11} with a small theoretical uncertainty of about 2-3%. The current experimental limit of BR <2.6 10^{-8} is from the KEK E391a experiment. Motivated by the success of the KEK E391a experiment, the KOTO is intended to pursue the search with an upgraded data acquisition system and detectors. Our signal is a pair of photons from the π^0decay and no other detected particles. The detectors is composed of a Cesium Iodide (CsI) calorimeter as the main detector used for the measurement of photons. All other detectors work as hermetic veto counters. We have taken additional data since the first 2013 run. This talk will discuss the status of the analysis of the data, ongoing detector upgrades, and future plans.

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