

## Search for lepton universality violation in kaon two-body decays

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An experiment (E36) to search for lepton universality violation is planned at J-PARC. The ratio of decay widths of  $K_{e2}$  and  $K_{\mu 2}$  will be measured precisely using a high-intensity low-momentum kaon beam. In contrast to NA62 experiment at CERN the stopped beam technique is employed. The TREK detector, originally designed for T-violation search in  $K_{\mu 3}$  decays, will be used. The ratio may deviate from the standard model prediction due to contributions from new physics such as lepton flavor violating SUSY. E36 looks for such effects with a sensitivity of better than 0.25% in the decay width ratio. Beam time is scheduled in 2014 and 2015, and the preparation of the detector is now going on. Several detector R&Ds and test measurements have already been done. In this paper we present 1) the physics background of the lepton universality violation, 2) the detector system, 3) methods of systematic error suppression, and 4) the aimed sensitivity of the experiment.

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