

Abstract Submitted  
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**Status of the Neutron Radiative Decay Experiment** BENJAMIN ONEILL, Arizona State University, RDK II COLLABORATION — The theory of quantum electrodynamics predicts that beta decay of the neutron into a proton, electron, and antineutrino should be accompanied by a continuous spectrum of photons. We previously reported detection of photons from neutron beta decay with a branching ratio of  $(3.09 \pm 0.32) \times 10^{-3}$  in the energy range of 15keV to 340keV. This was achieved by prompt coincident detection of an electron and photon, in delayed coincidence with a proton. The photons were detected using a single bar of bismuth germanate scintillating crystal coupled to an avalanche photodiode (APD). Our most recent experiment employs an array of twelve of these detectors, as well as three large area APD detectors. We anticipate that our improved measurement of the branching ratio will have an uncertainty of 1 percent. In addition, we have extended the detectable energy range down to  $\approx 250$  eV and up to the endpoint. We will present an overview of the apparatus and an update of the status of the analysis on the branching ratio and the photon energy spectrum with a focus on the large area APDs.

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