



## High Precision EUV Spectroscopy with Superconducting Tunnel Junctions

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We have characterized the photon response of superconducting tunnel junctions (STJs) in the extreme ultra-violet (EUV) energy range below 100 eV with a pulsed 355 nm laser. The detectors are operated at rates up to 5000 counts/s, are very linear in energy and have an energy resolution between 0.75 and 1.9 eV. We observe multiple peaks that correspond to an integer number of photons with a Poissonian probability distribution and that can be used for precise energy calibration. The uncertainty of the centroid depends on the detector resolution and the counting statistics and can be  $\sim 1$  meV for well-separated peaks with  $>105$  counts. We discuss the precision of the energy calibration as a function of detector resolution, background level and total number of counts