



Photon noise limited radiation detection with lens-antenna coupled Microwave Kinetic Inductance Detectors

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Microwave Kinetic Inductance Detectors (MKIDs) have shown great potential for sub-mm instrumentation because of the high scalability of the technology. Here we demonstrate for the first time in the sub-mm band (0.1...2 mm) a photon noise limited performance of a small antenna coupled MKID detector array and we describe the relation between photon noise and MKID intrinsic generation-recombination noise. Additionally we use the observed photon noise to measure the optical efficiency of detectors to be 0.8 ± 0.2 .

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