



Contribution ID: 38

Type: Oral Presentation

Fabrication of antenna-coupled KID array for Cosmic Microwave Background detection

Monday, 5 June 2017 14:30 (15 minutes)

Microwave Kinetic Inductance Detectors (MKIDs) have become an attractive alternative to traditional Transition Edge Sensor (TES) bolometers in the sub-mm and mm observing community due to its innate frequency multiplexing capabilities and simple lithographic processes. These advantages make MKIDs a viable option for the O(100,000) detectors needed for the upcoming Cosmic Microwave Background - Stage 4 (CMB-S4) experiment. We have fabricated dual polarization antenna-coupled MKID array in the ~100GHz band optimized for CMB detection. The Al KIDs are made from evaporating Al on a high resistivity silicon substrate. The microstrip coupling the antenna and KID consists of growing Si₃N₄ between two layers of evaporated Nb. In addition, we present the preliminary characterization of these devices with a cryogenic blackbody load.

Primary author: Ms TANG, Qing Yang (University of Chicago)

Presenter: Ms TANG, Qing Yang (University of Chicago)

Session Classification: Dark Matter and Astrophysics