



Contribution ID: 200

Type: Oral

## Thermal Kinetic Inductance Detectors for millimeter wave cosmology

*Wednesday, 8 November 2023 14:15 (15 minutes)*

We are currently developing thermal kinetic inductance detectors (TKIDs) for CMB observations and millimeter wave spectroscopy. TKIDs use the temperature dependence of a KID-like high Q resonator as a drop in replacement to TESes, granting bolometric arrays the ease of KID-like readout. We will report on the laboratory performance of an array of antenna coupled KIDs designed for CMB observations at the South Pole. We will also report on early stage work developing lower  $T_c$  high resistivity TKIDs that would operate background limited under the lower loading environments of space CMB observatories or the narrow bandwidths typical of millimeter wave spectrometers.

### Early Career

No

**Primary author:** O'BRIENT, Roger (NASA JPL)

**Co-authors:** Dr STEINBACH, Bryan (California Institute of Technology); Dr FREZ, Clifford (Jet Propulsion Laboratory)

**Presenter:** O'BRIENT, Roger (NASA JPL)

**Session Classification:** RDC8

**Track Classification:** RDC Parallel Sessions: RDC8: Quantum and Superconducting Sensors