



Contribution ID: 387

Type: Review/Tutorial

A Review of Superconducting Readout Electronics for Low-Temperature Detectors

Tuesday, July 23, 2019 4:45 PM (30 minutes)

Thanks to the continuous advances in nanofabrication the size of superconducting detector arrays, such as those based on TESs or KIDs, is approaching $\sim 10^5 - 10^6$ sensors, which is driven by the need to provide faster and more sensitive systems. To access the signals from these arrays, suitable technologies are needed to amplify and multiplex the signals at the cold stage to reduce the cold-stage wiring complexity, cost, and thermal loads in the cooling system, while minimally degrading the signal to noise. In this talk, I will provide an overview of some of the more recent readout technologies being developed in our community, such as superconducting parametric amplifiers, kinetic inductance parametric upconverters, and microwave SQUID multiplexers.

Less than 5 years of experience since completion of Ph.D

N

Student (Ph.D., M.Sc. or B.Sc.)

N

Primary author: Dr NOROOZIAN, Omid (NASA GSFC)

Presenter: Dr NOROOZIAN, Omid (NASA GSFC)

Session Classification: Orals LM 002

Track Classification: Detector readout, signal processing, and related technologies