

Exploring a potential link between environmental radiation and excess quasiparticles in superconducting qubits

Tuesday, 29 January 2019 12:00 (25 minutes)

Excess quasiparticles are universally observed to limit coherence times in superconducting qubits. It is hypothesized that natural radiation in the laboratory environment could be the cause. We will review the evidence for excess quasiparticles and explore our hypothesis that environmental radiation is the source of them. Plans for an imminent experiment to test the hypothesis by placing a series of radioactive sources in close proximity to qubit specimens will be presented.

Primary author: Dr VANDEVENDER, Brent (Pacific Northwest National Laboratory)

Co-authors: Prof. FORMAGGIO, Joe (Massachusetts Institute of Technology); Dr ORRELL, John (Pacific Northwest National Laboratory); Prof. OLIVER, Will (Massachusetts Institute of Technology and Lincoln Labs)

Presenter: Dr VANDEVENDER, Brent (Pacific Northwest National Laboratory)

Session Classification: Sensing IV

Track Classification: Quantum sensing