



Contribution ID : 100

Type : invited

## The SQUID: Fundamentals and Applications

*giovedì 1 settembre 2022 18:00 (60)*

Superconducting electronics was born in a remarkably short, three-year period that began one-half century after the discovery of superconductivity. The crucial steps were the observation of flux quantization in 1961, the prediction and observation of Josephson tunneling in 1962 and 1963, respectively, and the demonstration of quantum interference in a superconducting ring containing two Josephson junctions in 1964—the Superconducting QUantum Interference Device. I briefly review my early work as a research student at the University of Cambridge. Today’s SQUIDs, fabricated from patterned, multilayer thin films on silicon wafers, offer extraordinary sensitivity to magnetic flux and have a broad range of applications. I describe experiments to image distant galaxy clusters, to search for the axion—a candidate particle for cold dark matter— and to perform magnetic resonance imaging (MRI) in microtesla magnetic fields.

**Primary author(s)** : Prof. CLARKE, John (University of California, Berkeley)

**Presenter(s)** : Prof. CLARKE, John (University of California, Berkeley)

**Session Classification** : Session 10