



Contribution ID: 144

Type: **Oral**

## Scalable SNSPD cryogenic readout

*Wednesday, 8 November 2023 16:35 (15 minutes)*

The HYDRA Microelectronics Codesign collaboration is developing scalable superconducting nanowire sensors (SNSPD) and cryogenic readout combining superconducting nanocryotrons and cryoCMOS ASICs operating at 4K.

We will present the status of the development of superconducting nanowire devices and circuit architectures, scalable high-density interconnect architecture for large-format SNSPD arrays at the 1 Kelvin stage, and a 32-channel 22nm cryoCMOS ASIC prototype for control and readout with ultrafast timing (10s ps).

### Early Career

**Primary authors:** QUINN, Adam (Fermilab); KORZH, Boris (JPL); BRAGA, Davide (Fermilab); KNEHR, Emanuel (JPL); FAHIM, Farah (Fermilab); FREDENBURG, Jeff (Fermilab); BERGGREN, Karl (MIT); WOODWORTH, Kyle (Fermilab); CASTELLANI, Matteo (MIT); SHAW, Matthew (Jet Propulsion Laboratory); MEDEIROS, Owen (MIT); FOSTER, Reed (MIT); LEE, Sangbaek (Argonne National Laboratory); ARMSTRONG, Whitney (Argonne National Laboratory)

**Presenter:** BRAGA, Davide (Fermilab)

**Session Classification:** RDC4

**Track Classification:** RDC Parallel Sessions: RDC4: Readout and ASICs