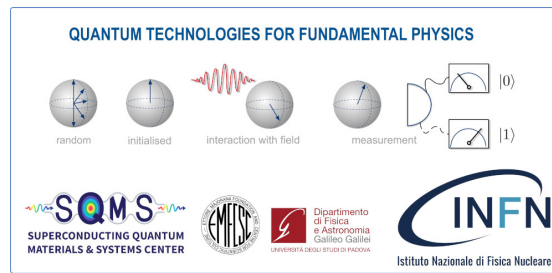


Quantum Technologies for Fundamental Physics



Contribution ID: 23

Type: not specified

Performance and scalability tradeoffs in a superconducting qubit processor architecture

Saturday, 2 September 2023 12:30 (30 minutes)

Rigetti Computing's QPU roadmap projects scaling to large systems by lateral tiling of many individual superconducting qubit chips in a multi-die assembly. Each chip in the assembly, meanwhile, has a dense array of qubits and tunable couplers with 3D signalling. This talk will discuss the challenges of engineering such a QPU to have long coherence times, fast control, and strong qubit-qubit interactions while maintaining scalability. In particular, it will cover strategies for mitigating the additional loss channels introduced by the high density of signal lines needed for fast operation of Rigetti's circuit architecture.

Presenter: BESTWICK, Andrew (Rigetti)

Session Classification: Physics Case for Quantum Technologies