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Quantum computing and accelerator technology

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The successful development of a quantum computers, quantum sensing and communication is dependent, amongst other aspects, on the capability of extending the coherence time of qubits - the limit on how long a qubit can retain its quantum state before that state is destroyed by noise. Ultra-high Q radio frequency superconducting cavities, initially developed for particle accelerators, have allowed this coherence time of qubits to be extended by several orders of magnitude. After an introduction to the present challenges of quantum computing and sensing, an overview of how accelerator technology has contributed and continues to contribute to the significant progress in these domains will be given. Future developments will also be outlined.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

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