

## **DEMETRA: Mitigation of the Radioactivity Effects in Quantum-Bits**

Superconducting circuits are emerging as leading candidates in the development of Quantum Bits (qubits). Their main limit with respect to the other technologies resides in the poor coherence time, i.e. the time in which they retain a quantum behaviour. The DEMETRA project proposes environmental radioactivity as one of the sources of decoherence: interactions in the substrates on which the qubit is deposited can release energy in the qubit, causing the loss of coherence. We propose a plan to investigate and suppress the various sources of radioactivity with the ultimate goal of improving the performance of superconducting qubits.

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