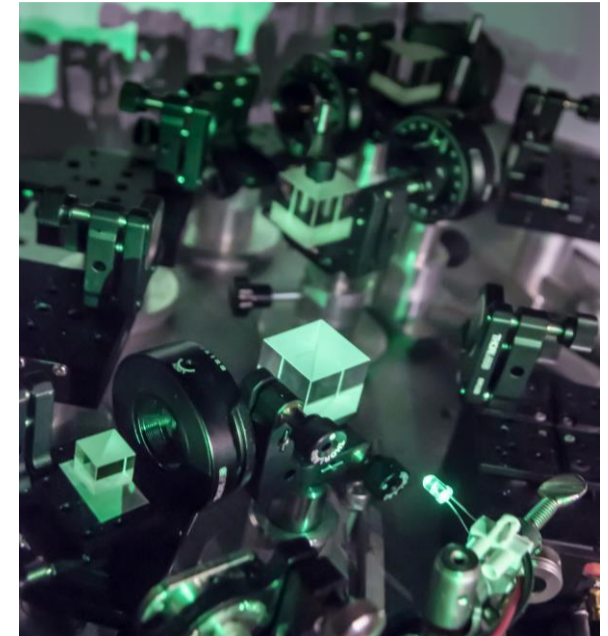


INFN-Q@TN SEMINARIO



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Modelling superconducting qubits: some history and recent advances



Martedì 25 Luglio, 2023 – h 14.00

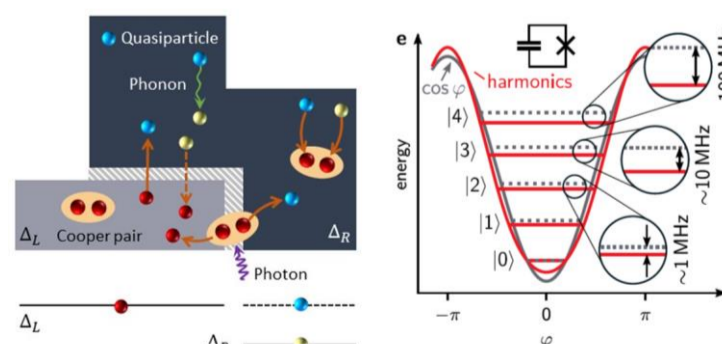
Aula A107 – Povo 1 – Via Sommarive n. 5

Abstract:

Superconducting circuits can be successfully employed as a platform for quantum computation only if they can be more precisely controlled and their decoherence rate further suppressed compared to current levels. To achieve these goals, detailed understanding and modelling of the properties of superconducting qubits is needed. After a brief overview of the historical development of such modelling, I will discuss two recent advances: [1] the inclusion of gap asymmetry when evaluating quasiparticle transition rates and [2] the accounting for higher harmonics in the Josephson effect when calculating transition frequencies.

[1] G. Marchegiani et al., PRX Quantum 3, 040338 (2022)

[2] D. Willsch et al., arXiv:2302.09192



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