



Contribution ID: 352

Type: **Poster**

[573] Global vs local bath in superconducting waveguide QED experiments

Tuesday, 31 August 2021 19:12 (1 minute)

Characterizing and controlling the coupling between qubits and environmental degrees of freedom is one of the central problems in quantum systems engineering. The coupling of one quantum system to multiple environmental degrees of freedom attracted significant attention during the last years both on theoretical and experimental sides, especially in the field of superconducting quantum circuits. In this work we investigate the problem in the context of 3D waveguide Quantum Electrodynamics (wQED), and demonstrate that in a typical experimental situation the environment can be considered as consisting of a global and a local bath. We realize an experimental protocol to extract the respective temperatures of the two baths.

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Session Classification: Poster Session

Track Classification: Quantum Information and Quantum Computing