

Josephson Metamaterials for Quantum Technologies

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Josephson metamaterials are crucial tools in superconducting quantum technologies since they are typically adopted as Traveling Wave Parametric Amplifiers (TWPAs) allowing broadband and near quantum-noise-limited microwave detection¹. In this talk, I will present our recent experimental results on the use of a Reversed Kerr TWPA² as first amplification stage for performing single-shot readout of transmon superconducting qubits. I will discuss fidelity performance in presence of spurious tones generation³. Finally, I will discuss the perspectives of this work in the framework of microwave photonics with superconducting quantum devices.

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References:

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