Single Transmon Qubit with a Readout Resonator

Platform 3: Qiskit Metal Platform

**Design & Implementation**

-Create transmon and resonator components with appropriate geometric dimensions.

-Establish proper coupling between qubit and readout resonator elements.

-Export fabrication-ready GDS files with correct layer assignments.

# **Analysis & Validation**

-Extract capacitance matrices and calculate transmon/resonator operating frequencies.

-Perform eigenmode analysis to determine coupling strengths and participation ratios.

-Validate design performance against realistic experimental parameter targets.

# **References**

References if any.

Note: This should be limited to 5 pages.

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Proposal Title

Platform 3: Qiskit Metal Platform

**Abstract**

Abstract of the proposal.

# **Main Idea**

Overview and relevant details of implementation.

# **Application**

Examples and description of potential/future applications of the proposed idea.

# **Value Add**

Explanation the key benefits/advantages, novelty of the idea/implementation.

# **References**

References if any.

Note: This should be limited to 2 pages.