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Title: Comparing Josephson Junction Fabrication Techniques for Superconducting Qubits

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Abstract: Superconducting circuits are being widely studied for use in quantum computing systems. One of the key circuit elements in these devices is the Josephson junction. The field primarily fabricates Josephson junctions from Al/AlOx/Al stacks patterned with electron-beam lithography using various resist stacks, chemical processing, and deposition techniques. In this talk, I will compare junctions and qubits fabricated at Lincoln Laboratory with MMA/Ge/ZEP Dolan-bridge processing, or resist bilayer Manhattan-style bridge-free processing. Uniformity and yield at various feature sizes, and planar transmon qubit performance will be reported.

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