

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Fabrication and characterization of low loss and high inductance Josephson tunnel junction chains for quantum circuits NICHOLAS GRABON, NATALYA SOLOVYEVA, LONG NGUYEN, YEN-HSIANG LIN, VLADIMIR MANUCHARYAN, University of Maryland — Linear chains of tightly packed Josephson junctions can realize a very high kinetic inductance circuit element, superinductance, with minimal losses. Superinductance is used in a conventional fluxonium qubit, but it has also been put forward as a key element of a fault-tolerant quantum circuits toolbox [1]. We report fabrication and microwave characterization of linear Al/AlO_x/Al Josephson tunnel junction chains and discuss their advantages and limitations as superinductors. [1]: 10.1103/PhysRevA.87.052306

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Date submitted: 06 Nov 2015

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