

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Improving the dynamic range of the Josephson Bifurcation Amplifier¹ LASZLO SZOCS, MICHAEL HATRIDGE, SHYAM SHANKAR, ANIRUDH NARLA, KATRINA SLIWA, MICHEL DEVORET, Yale Univ — The dynamic range of the Josephson Bifurcation Amplifier (JBA), acting as a phase-sensitive amplifier, can be improved by combination of several junctions in series and parallel in place of the single junction present in the original device. By analyzing the circuit Hamiltonian for a system with many amplifiers tiled in parallel, each containing junctions wired in series, a potential increase in the amplifier's dynamic range can be obtained while maintaining GHz-range tunability. Theoretical results and preliminary experimental data will be presented.

¹Work supported by IARPA, ARO, and NSF.

Laszlo Szocs
Yale Univ

Date submitted: 13 Nov 2014

Electronic form version 1.4