Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Characterization of shadow evaporated Al/AlOx/Al Josephson Junctions BRIAN BURKETT, Google, Santa Barbara, Z. CHEN, B. CHIARO, A. DUNSWORTH, B. FOXEN, C. NEILL, C. QUINTANA, J. WENNER, UC Santa Barbara, JOHN. M. MARTINIS, Google, Santa Barbara UC Santa Barbara, GOOGLE QUANTUM HARDWARE TEAM TEAM — Building a large-scale quantum computer depends crucially on developing a Josephson junction fabrication process that is reliable. We have collected and analyzed data for more than 10^5 junctions, measured using an automated DC probe station at room temperature. Using this method, we can identify and monitor the impact of subtle process parameters on junction performance resulting from aging, pressure, lithography and surface treatment. We also present transmission electron microscopy and electron energy loss spectroscopy of our junctions.

Brian Burkett
Google, Santa Barbara

Date submitted: 10 Nov 2016 Electronic form version 1.4