Abstract Submitted for the MAR17 Meeting of The American Physical Society

**On-chip control signal measurements for superconducting qubits** BROOKS FOXEN, UC Santa Barbraa, ZIJUN CHEN, BEN CHIARO, ANDREW DUNSWORTH, CHARLES NEILL, CHRIS QUINTANA, JIM WENNER, UC Santa Barbara, JOHN M. MARTINIS, UC Santa Barbara and Google Quantum Hardware, GOOGLE QUANTUM HARDWARE TEAM TEAM — As superconducting quantum computing circuits grow in complexity, efficiently tuning up highfidelity gate operations will become increasingly important. Chip mounts, wire bonds, and even commercial microwave connectors cause signal path irregularities that distort control waveforms in complex ways. I will present measurements of the system transfer function, from room temperature DAC to superconducting chip, with the goal of parameterizing gate distortion. Additionally we can use this model to improve the signal path and our gate performance.

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Date submitted: 10 Nov 2016

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