

Abstract Submitted  
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**Precise measurements of single gate errors in Josephson phase qubits** ERIK LUCERO, UC Santa Barbara, M. ANSMANN, R. BIALCZAK, N. KATZ, R. MCDERMOTT, M. NEELEY, A. O'CONNELL, M. STEFFEN, E. WEIG, A. CLELAND, J. MARTINIS — As Josephson phase qubits continue to improve, the accuracy of qubit manipulations become increasingly important. We have built a new generation of control electronics to generate microwave pulses with an accurate Gaussian-envelope for single qubit logic gates, using a modular and card-rack design to promote scalability. To understand the tradeoff between accuracy and speed, we plan to present an experiment that measures gate errors versus the width of the applied pulses. We intend to more precisely measure the accuracy of single qubit rotations using multi-pulse sequences, similar to that already done for ion-trap qubits.

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