

Abstract Submitted  
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**Parametric interactions in circuit-QED** MICHAEL DEFEO,  
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TEUFEL , JOSE AUMENTADO, NIST - Boulder — The circuit-QED architecture  
is a versatile platform for implementing quantum optics at microwave frequencies.  
Incorporating additional nonlinear coupling elements between linear modes in this  
architecture provides a mechanism to drive parametric interactions. These interac-  
tions are a powerful set of tools that can be used to synthesize complex quantum  
states, generate entanglement and enhance measurement. We will discuss exper-  
imental results utilizing parametric interactions to generate and study quantum  
states in superconducting circuits.

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