Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Robust quantum state transfer with suppressed parametric noise
MENGZHEN ZHANG, CHANGLING ZOU, LIANG JIANG, Yale University — For opto-electro-mechanical transducers, there are undesirable parametric processes that introduce parametric noise, which will limit the fidelity of the transferred quantum state [1]. To overcome this imperfection, we propose a quantum state transfer scheme with squeezed input states and measurement dependent compensation to eliminate the parametric noise from the quantum state transfer. Besides parametric noise, we also investigate the sensitivity of our scheme to thermal noise, signal frequency detuning and imperfect impedance matching, and show a good quantum state fidelity and applicability to quantum state transfer.

[1]R. W. Andrews, R. W. Peterson, T. P. Purdy, K. Cicak, R. W. Simmonds, C. A. Regal K. W. Lehnert, Nature Physics **10**, 321-326 (2014)

Mengzhen Zhang
Yale University

Date submitted: 06 Nov 2015 Electronic form version 1.4