Abstract Submitted
for the DAMOP20 Meeting of
The American Physical Society

Toward Room-Temperature Mechanical Motion Driven by Quantum Radiation Pressure Noise. JIAXING MA, VINCENT DUMONT, SIMON BERNARD, THOMAS CLARK, JACK SANKEY, McGill Univ — We present progress toward an optomechanical system in which the motion of a "trampoline" mechanical system is overwhelmingly determined by the quantum radiation pressure noise (QRPN) of laser light circulating in a microns-long fiber cavity. As of January, we have developed a flexure-based chip-mount capable of maintaining the trampoline's high Q-factor, and a monolithic piezo-actuated mount for the fiber mirrors. The next steps are to assemble the device in a vibration-isolated UHV chamber and stabilize it. If successful, this experiment will provide access to measurements at the standard quantum limit and the generation of broadband squeezed light in a room-temperature apparatus.

Jiaxing Ma
McGill Univ

Date submitted: 31 Jan 2020 Electronic form version 1.4