

Abstract Submitted
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**Towards Testing Quantum Mechanics with
Micro-Optomechanical Systems**¹ DUSTIN KLECKNER, SUSANNA THON,
University of California - Santa Barbara, EVAN JEFFREY, University of Leiden,
DIRK BOUWMEESTER, University of California - Santa Barbara and University
of Leiden — We review our work in micro-optomechanical systems. Motivation
for work on these systems is based in proposals to test quantum mechanics in new
regimes. Although extremely challenging, creating a quantum superposition of a
micro-mechanical oscillator coupled to an optical cavity seems experimentally feasi-
ble with current technology. Additionally, the optomechanical systems used for this
type of research have other applications, such as optical cooling, as recently demon-
strated by several independent groups. Finally we will briefly discuss the direction
of our research in the near future, including the use of conventional cryogenics to
cool the resonator and the prospects for several related types of devices.

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Dustin Kleckner
University of California - Santa Barbara

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