

# Optical Tweezer Phonon Laser

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## 概要

In this talk the field of optomechanics - or the interaction of light with mechanical motion - will be introduced in the context of LIGO, which was recently in the news for the detection of gravitational waves, and for which the Nobel Prize in Physics was awarded last year. A variation on the standard model of optomechanics will then be described using an optically levitated nanoparticle, which will be shown to realize the mechanical analog of an optical laser. The relevant theoretical proposal from the speaker's group at the Rochester Institute of Technology will be discussed and the experimental realization by collaborators at the University of Rochester will be presented. Our work represents a substantial advance in the generation of coherent phonons in levitated systems and can be readily extended to other platforms.

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