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**Sensitive orthogonal optical monitoring of a micromechanical oscillator** AKO CHIJIJOKE, JOHN LAWALL, National Institute of Standards and Technology, Gaithersburg, MD — Optical sensing of oscillations of a mechanical microresonator is of crucial interest for a number of purposes including observation of quantum behavior of macroscopic objects and force microscopy. The majority of optical sensing schemes use light aligned with the axis of mechanical oscillation. We present sensitive monitoring of the oscillations of a micromechanical resonator orthogonal to the field in an optical cavity, and its particular advantages.

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