

Abstract Submitted
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Measurement of Thermal Noise in Optical Coatings for Gravitational-Wave Detectors¹ MICHAEL HARTMAN, JOHANNES EICHHOLZ, PAUL FULDA, GIACOMO CIANI, DAVID B. TANNER, GUIDO MUELLER, University of Florida — Interferometric gravitational-wave detectors measure the gravitational-wave-induced strain in the arms of kilometer scale Michelson interferometers. Second-generation detectors, such as Advanced LIGO, are expected to be limited by optical coating thermal noise in the most sensitive region (30-300 Hz) of the detectors' frequency bands. The direct measurement of coating thermal noise in different optical coatings is essential to both the validation of current thermal noise models as well as the research of future coating material candidates. The THERmal noise Optical Resonator (THOR) is a testbed being developed at the University of Florida to directly measure the thermal noise in optical coatings on mirrors in the frequency band around 100 Hz. This is a presentation on the status of THOR.

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