

Abstract Submitted  
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**Testing gravity at the micron scale using optically trapped nanospheres**<sup>1</sup> ANDREW GERACI, GAMBHIR RANJIT, MARK CUNNINGHAM, KIRSTEN CASEY, University of Nevada Reno — According to several theories beyond the Standard Model, Yukawa-type corrections to Newtonian gravity may occur at micrometer length scales. I will discuss our experiment dedicated to searching for these forces using laser-cooled silica nanospheres in an optical standing-wave trap. Using this system we have demonstrated calibrated force sensing at the zeptonewton level. The nanospheres can act as a sensor for short-range Yukawa-forces when levitated near a microfabricated source mass.

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