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To all members of the
Faculty of Physics

Vienna, 18 April 2017

Invitation to the public defense of the doctoral thesis

Development of a micromechanical proof-of-principle experiment for measuring the gravitational force of milligram masses

by

Jonas Schmöle

Monday, 24 April 2017, 11:00
Kurt-Gödel Lecture Hall, ground floor, Boltzmanngasse 5, 1090 Vienna

Abstract

The presented research addresses a simple question: how small can one make a gravitational source mass and still detect its gravitational coupling to a nearby test mass? I describe an experimental scheme based on micromechanical sensing to observe gravity between milligram-scale source masses, thereby improving the current smallest source mass values by three orders of magnitude and possibly even more. Further, I discuss the implications of such measurements both for improved precision measurements of Newton's constant and for a new generation of experiments at the interface between quantum physics and gravity.

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