

===== Title, Author and Abstract

A broadband detector for an experiment to measure the speed of gravity in short distances

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An experiment to measure the speed of gravitational signals in short distances is being developed with the goal to study its behavior as traveling through a medium. The experiment is composed of a sapphire device that works as a detector suspended in vacuum cooled down to 4.2 Kelvin. The amplitudes of the central device (detector) is monitored by an ultralow phase noise microwave signal using resonance in the whispering gallery modes. As sapphire has a very high mechanical Q the detection band should be quite small lowering the detection sensitivity. In this work a new shape for the detector device is shown allowing a band detection of several hundred Hertz.

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