

Towards high precision measurements of dynamic gravity

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ABSTRACT

With advances in gravitational physics, especially in the field of gravitational wave (GW) research [1], fully controlled laboratory experiments on dynamic gravitation become more and more important [1]. Two gravitational transmitter detector systems have been described recently [2,3], where the transmitter consists of either a vibrating bending beam or two rotating bars, made of tungsten. In both cases, the detector consists of a high Q (10^4), 42 Hz resonant bending beam. Its motion is analyzed using three laser Doppler vibrometers and multichannel lock-in amplifiers. Here we present progress on several fronts: High precision gravitational interaction modeling, quantitative crosstalk assessment and transmitter characterization using neutron tomography.

References

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