SEMPARIS – Séminaires en région parisienne

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Particle Physics at LPTHE

Vendredi 7 Avril 2023, 14 :00
LPTHE, Library and Zoom (link in the comments)(Zoom link : https ://cern.zoom.us/j/62513963625?pwd=aVBkTWpNdUpzOWVmR2toTXgyODFqZz09)
Domaines : hep-ph

Titre : *Quantum Mechanics of Gravitational Waves*

Orateur : **George Zahariade (IFAE Barcelona)**

Résumé : *We study the effect of a quantized gravitational wave on a LIGO/VIRGO-type gravitational wave detector. We find that the arm-length is subject to a stochastic tidal force whose properties depend on the exact quantum state of the gravitational field, if the gravitational field is quantized. The quantum nature of gravity could thus (in principle) be detectable as an additional noise source at gravitational wave detectors.*

Based on : M. Parikh, F. Wilczek, and G. Zahariade, Phys. Rev. Lett. 127, 081602 (2021) - arxiv :2010.08205