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Proposal of an Interferometer for Quantum Gravity Tests

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In contemporary physics, there is a quest to unite quantum theory and general relativity. Recently, there has been discussion about using the observation of gravity-induced entanglement to demonstrate the quantum nature of gravity. While some experimental proposals have been in this direction, the extreme technological requirements make their implementation quite challenging. We present a table-top interferometer that could enable less demanding quantum gravity tests. This interferometer relies on quantum superpositions of steady massive objects. It is compact and requires only short-range electromagnetic. Additionally, it allows for the re-use of the quantum probes involved

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