

Abstract Submitted
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Self-gravity with Stern-Gerlach Humpty-Dumpty Interferometry

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The extreme weakness of gravity at the quantum scale has made it nearly impossible to access experimentally. However, Hatifi and Durt (arXiv:2006.07420) propose a reversible (Humpty-Dumpty type) Stern-Gerlach experiment to measure the gravitational interaction of a mesoscopic particle with itself, which, once performed, could inform us of quantum gravity through an observable phase shift. I will elaborate on the appearance of self-gravity in the mesoscopic regime and explain how the Humpty-Dumpty interferometer can be used in connection with the Schrodinger-Newton equation.

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