

Abstract Submitted
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Casimir Levitation: Stabilization of a neutral atom above a dielectric ring¹ JOHN JOSEPH MARCHETTA, None — Levitation, in popular culture, is the phenomenon of an object rising against gravity by supernatural means. However, levitation is not the work of anything supernatural, nor do you need to have attended Hogwarts School of Witchcraft and Wizardry in order to learn how to achieve it. The goal of my project is to propose a method to levitate a neutral, anisotropically polarizable, atom above a dielectric ring using the Casimir effect. In particular, we have already shown that an anisotropically polarizable atom experiences a repulsive force when it approaches the dielectric ring along the symmetry axis of the ring. But, the atom is not stable on this axis. We are working on the proposal that a spinning anisotropically polarizable atom above a dielectric ring will achieve stability, and thus get trapped. Our goal is to prove this very appealing hypothesis analytically.

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None

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