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Nuclear Spin Dependent Parity Violation in Diatomic Molecules
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— Of the four forces, the weak force is the only one that violates parity. That is, if the particles involved are arranged in a mirror image of the original arrangement, the strength of the weak force between them will be different. We aim to measure the strength of the weak force between electrons and nucleons (protons or neutrons) in order to deduce one of the weak force's charges (analogous to how the electron charge determines the strength of electromagnetism). I will talk about the methods we use to amplify the relatively small weak force, and I will talk about the roles that optics and lasers play in the experiment.

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