

Michael Hartman - The Optical Cavity as a Powerful Tool in Experimental Fundamental Physics: A Look at Three Use Cases

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The Fabry-Perot Interferometric Optical Cavity has unique characteristics compared to split-arm interferometers which make it a powerful tool in experimental physics research. In this seminar, I recount my experiences in three research groups from varying fields in fundamental physics: interferometric gravitational-wave detection, the search for vacuum birefringence of the quantum vacuum, and the search for axion-like particles as a candidate for dark matter. In each of these projects, the optical cavity plays a central role in the precision measurement of physical phenomena.

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