



Seminar/Talk

Quantum Colloquium: Optomechanical and spin-based sensing for Fifth forces, Dark Matter, and other Beyond the Standard Model physics

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Host: Onur Hosten

Despite the enormous success of the Standard Model of particle physics, many basic phenomena around us remain without any satisfactory explanation, including the nature of Dark Matter and Dark Energy, which together make up 95 percent of our universe. Complementary to high-energy particle colliders or large-scale detectors, a variety of ultra-sensitive tabletop experiments are well-suited to discover a wide range of new phenomena beyond the Standard Model, where feeble interactions require precision measurements rather than high energies. In this talk I will describe our experimental efforts using dielectric objects supported by radiation pressure as precision sensors to search for quantum effects related to gravity, high-frequency gravitational waves, and Dark Matter. I will also discuss The Axion Resonant InterAction Detection Experiment (ARIADNE), which aims to detect novel short-range spin-dependent interactions.

Tuesday, October 17, 2023 11:00am - 12:00pm

Office Bldg West / Ground floor / Heinzl Seminar Room



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