

QIS Special Seminar

Dr. Lee Liu

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Date: Monday, February 26, 2024

Time: 10:30 A.M.

Location: PHYS 242

Zoom link option: <https://purdue-edu.zoom.us/j/92971449579>



Quantum state-resolved molecular spectroscopy: Exploring symmetry, complexity, and emergence.

Individual molecules can exhibit striking emergent phenomena due to their perfect symmetries, complexity, and rich spectrum of collective excitations. I will show how quantum state-resolved spectroscopy allows us to study and manipulate these dynamics.

We experimentally explored these ideas in a familiar molecule: C₆₀. Its rigidity and symmetry make it the largest molecule for which quantum state resolution has been achieved. Our experiments show surprising behaviour mediated by C₆₀'s symmetry and rotations. I will conclude with prospects for using spectroscopy of C₆₀ and other complexes to explore new emergent phenomena.