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**Spin Dynamics for Wavepackets in Monolayer Graphene and Rashba systems** BAILEY HSU, JEAN-FRANCOIS VAN HUELE, Brigham Young University — Spintronics, a technology to manipulate spin degrees of freedom in addition to the charge of an electron, has attracted considerable interest for its potential to increase computational power. Two current candidates for promising spintronics devices are graphene and materials with Rashba spin-orbit coupling. The Hamiltonians for these two systems involve combinations of momentum operators and spin operators. In this talk, we use the quantum propagator method to analyze the spin dynamics for localized wavepackets in these two physical systems and we discuss the occurrences of interesting localization features with animated 2D plots.

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