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Controlling Inelastic Light Scattering Quantum Pathways in Graphene JASON HORNG, CHI-FAN CHEN, CHEOL-HWAN PARK, BRYAN W. BOUDOURIS, BAISONG GENG, CAGLAR GIRIT, ALEX ZETTL, MICHAEL CROMMIE, RACHEL SEGALMAN, STEVEN LOUIE, FENG WANG, UC Berkeley — Graphene exhibits unique tunable optical properties. Researchers have observed infrared absorptions in graphene interband transitions as well as intraband transitions can be modified substantially through electrostatic gating. At the same time, inelastic Raman scattering from few layer graphene is readily observable and widely used to characterize graphene quality, and to probe graphene electron-phonon interactions. In strongly gated graphene, Raman scattering from graphene can also be varied from electrical doping through direct change of electronic transitions. In this talk, I will describe how the Raman intensity of G-mode and 2D-mode Raman varies with the Fermi energy in doped graphene.

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