Abstract Submitted
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Two-dimensional Fourier Transform Studies of Excitons in Layered Indium Selenide N. GLIKIN, P. DEY, J. PAUL, D. KARAISKAJ, University of South Florida, Z. KOVALYUK, Z. KUDRYNSKYI, National Academy of Sciences of Ukraine, A. ROMERO, West Virginia University — Indium selenide (InSe) is a layered semiconducting material whose electronic properties are strongly influenced by many-body interactions. Having potential applications including optoelectronic and photovoltaic uses, it is necessary to understand the nature of these interactions in order to understand the material properties of interest. Three-pulse four-wave mixing (FWM) and Two-dimensional Fourier transform (2DFT) spectroscopy are used to study the many-body interactions in γ-InSe by measuring excitonic dephasing and lifetime. Excitation-density-dependent and temperature-dependent measurements of the homogeneous linewidth indicate strong contributions of exciton-exciton scattering and exciton-phonon interactions.

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