

Abstract Submitted
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Mechanism of excitonic dephasing in layered InSe crystals D. KARAIKAJ, P. DEY, J. PAUL, N. GLIKIN, University of South Florida, Z. KOVALYUK, Z. KUDRYNSKYI, National Academy of Sciences of Ukraine, A. ROMERO, West Virginia University — The dephasing and lifetime of excitons in InSe layered crystals has been carefully measured using three pulse four-wave mixing and two-dimensional Fourier transform (2DFT) spectroscopy. We obtain a complete and detailed picture of the mechanism of excitonic dephasing in this layered material. The temperature dependence provides a detailed description of the phonon-exciton interactions and the zero Kelvin limit of the homogeneous linewidth. The excitation density dependence reveals strong excitation induced dephasing due to exciton-exciton scattering.

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