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Optical Two Dimensional Fourier Transform Spectroscopy of Layered Metal Dichalcogenides[1] P. DEY, J. PAUL, C.E. STEVENS, Dept of Physics, University of South Florida, Z.D. KOVALYUK, Z.R. KUDRYNSKYI, The National Academy of Sciences of Ukraine, A.H. ROMERO, Dept of Physics, West Virginia University, A. CANTARERO, Material Science, University of Valencia, D.J. HILTON, Dept of Physics, University of Alabama at Birmingham, J. SHAN, Dept of Physics, Pennsylvania State University, D. KARAISKAJ, Dept of Physics, University of South Florida, Z.D.KOVALYUK AND Z.R.KUDRYNSKYI COLLABORATION, A.H.ROMERO COLLABORATION, A. CANTARERO COLLABORATION, D.J.HILTON COLLABORATION, J. SHAN COLLABORATION
— Nonlinear two-dimensional Fourier transform (2DFT) measurements were used to study the mechanism of excitonic dephasing and probe the electronic structure of the excitonic ground state in layered metal dichalcogenides. Temperature-dependent 2DFT measurements were performed to probe exciton-phonon interactions. Excitation density dependent 2DFT measurements reveal exciton-exciton and exciton-carrier scattering, and the lower limit for the homogeneous linewidth of excitons on positively and negatively doped samples.

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