Abstract Submitted
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Electrostatic conveyer for excitons A.G. WINBOW, J.R. LEONARD, M. REMEIKA, A.A. HIGH, E. GREEN, A.T. HAMMACK, L.V. BUTOV, University of California, San Diego, M. HANSON, A.C. GOSSARD, University of California, Santa Barbara — We report on the realization of electrostatic conveyers for indirect excitons in GaAs/AlGaAs coupled quantum wells. The conveyer is a laterally moving lattice potential for excitons. Its amplitude and speed can be controlled by laterally modulated oscillating electrode voltages. We observed the exciton transport via the conveyer over several tens of microns and studied the transport as a function of the conveyer amplitude, exciton density, and exciton lifetime. We observed a *dynamical* localization-delocalization transition for the excitons in the conveyer with varying exciton density and conveyer amplitude: In the localization regime, excitons are moved by the conveyer, following the moving lattice potential, while in the delocalized regime, excitons do not follow the conveyer motion.

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