

Abstract Submitted
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Observation of magnetic non-reciprocity for mobile excitons bound to stacking-fault potentials¹ KAI-MEI FU, TODD KARIN, XIAYU LINPENG, Univ of Washington, ARNE LUDWIG, ANDREAS WIECK, Ruhr-Universitat Bochum, MIKHAIL GLAZOV, Ioffe Institute — We show that single stacking faults in high-purity GaAs provide the most homogeneous two-dimensional potential for excitons yet reported. The ultra-narrow excitonic transitions enable us to directly observe the microscopic properties of the exciton, including a 0 transverse component of the hole g-factor, which are determined by the C_{3v} symmetry of the system. A surprising magnetic non-reciprocity effect, in which the energy of the detected excitonic emission depends on the sign of the magnetic field, is also observed. This effect is due to conservation of the exciton two-dimensional momentum in the process of light emission and provides direct evidence that excitons are mobile in this novel potential.

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