

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Exciton transport phenomena in monolayer MoS₂ MASARU ONGA, Quantum-Phase Electronics center (QPEC) and Department of Applied Physics, The University of Tokyo, YIJIN ZHANG, Max-Planck-Institut für Festkörperforschung, TOSHIYA IDEUE, YOSHIHIRO IWASA, Quantum-Phase Electronics center (QPEC) and Department of Applied Physics, The University of Tokyo — Monolayer transition metal dichalcogenides exhibit unique optical phenomena owing to the two-dimensional structure and valley degree of freedom. Many researchers have revealed that excitonic states play an important role in optical response, and have observed the diffusion transport of excitons in this system at room temperature [1, 2]. Here we report exciton transport phenomena in monolayer MoS₂ at low temperature through photoluminescence mapping. Our results can provide us a new platform for exciton-based optoelectronics with valley degrees of freedom. [1] S. Mouri et. al., PRB 90, 155449 (2014). [2] Q. Cui et. al., ACS nano 8, 2970 (2014).

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Date submitted: 09 Nov 2016

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