

Abstract Submitted
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Experimental evidence for inhomogeneous charge transport in MoS₂ nanoflakes¹ CHI-TE LIANG, Department of Physics, National Taiwan University, Taipei 106, Taiwan, SHUN-TSUNG LO, Graduate Institute of Applied Physics, National Taiwan University, Taipei 106, Taiwan, OLEH KLOCHAN, School of Physics, University of New South Wales, Australia, C.-H. LIU, W.-H. WANG, Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei 106, Taiwan, ALEX R. HAMILTON, School of Physics, University of New South Wales, Sydney, Australia — We study electron transport in a monolayer MoS₂ nanoflake over a wide range of density, temperature, and electric bias. We find that the transport is best described by a percolating picture in which the disorder breaks translational invariance, breaking the MoS₂ system up into a series of puddles, rather than previous pictures in which the disorder is treated as uniform and homogeneous. Our work provides insight to a unified picture of charge transport in monolayer MoS₂ nanoflakes and contributes to the development of next-generation MoS₂-based devices.

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