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Experimental evidence for a Bragg glass density wave phase in a transition-metal dichalcogenide[1] JUN-ICHI OKAMOTO, CARLOS ARGUELLO, ETHAN ROSENTAL, ABHAY PASUPATHY, ANDREW MILLIS, Columbia University — We show that the spatial dependence of current-voltage characteristics obtained by scanning tunneling microscopy indicates that the charge density wave occurring in $NbSe_2$ is subject to locally strong pinning arising from a non-negligible density of impurities. However, on the length scales accessible in this experiment, the material is found to be in a Bragg glass phase where dislocations and anti-dislocations occur in bound pairs; free dislocations are not observed. We present calculations based on a Landau theory which explain how strong local modulations may produce only a weak long range effect on the CDW phase.

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