

Abstract Submitted
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Observation of the Signatures of Glassy Vortex Dynamics in $2H$ - $NbSe_2$ ¹ XU DU, GUOHONG LI, EVA Y. ANDREI, MARK J. HIGGINS, Department of Physics and Astronomy, Rutgers University, PAVEL SHUK, MARTHA GREENBLATT, Department of Chemistry, Rutgers University — Using time resolved transport measurements, we observed clear evidence of glassy dynamics in the current driven vortex system in clean, weak pinning $2H$ - $NbSe_2$ single crystals prepared by field cooling through the superconducting transition. Simple aging was observed by means of scaling over the waiting times between two consecutive current pulses. A memory function was defined to describe how the previous pulse is “memorized” when the system is probed by a second pulse. The complex behavior of the driven vortex system in the glassy state is well characterized by a simple picture of the time evolution of the glassy states in configuration space. Preliminary results on direct imaging of the current driven vortices using Hall probe microscopy will be discussed.

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