

Abstract Submitted
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Probing microscopic dynamics of a two-dimensional disordered dipolar spin system ALEXANDER SUSHKOV, Boston Univ — We investigate the microscopic dynamics of disordered many-body dipolar spin systems using nitrogen-vacancy (NV) centers in diamond. Naturally-occurring electronic spins on the surface of a diamond crystal form a two-dimensional dipolar spin system, which is probed and manipulated via a shallow NV center, a few nanometers below the surface. We observe slow decay of the spin autocorrelation functions under a variety of experimental conditions.

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