

Abstract Submitted
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Probing quantum dynamics of strongly interacting spin ensembles GEORG KUCSKO, PETER MAURER, NORMAN YAO, MICHAEL KNAP, SARANG GOPALAKRISHNAN, MIKHAIL LUKIN, Harvard University, LUKIN GROUP TEAM — Ensembles of strongly interacting spins offer an attractive platform for the study of novel many-body states in quantum dynamics. This work focuses on recent progress towards understanding the spin dynamics within a diamond sample of very high nitrogen vacancy (NV) concentration (~ 80 ppm). Due to the small distance between neighboring NVs, their interactions dominate over decoherence. Experimental observations of quantum spin dynamics in such a system as well as probing of localization of spin excitations will be discussed.

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