

Abstract Submitted
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Proposal for observing noise-induced coherent dynamics in NV centers SUYESH KOYU, TIMUR TSCHERBUL, University of Nevada Reno — We explore the possibility for the experimental observation of noise-induced Fano coherences in nitrogen-vacancy (NV) centers in diamond. The ground electronic state of the NV center is proposed as a three-level V-system, which exhibits coherent dynamics when driven by incoherent microwave radiation [1-3]. We show how both the oscillatory (overdamped) and long-lived (underdamped) regimes of coherent dynamics [2,3] can be realized experimentally by varying the excited state splitting of the $m_s = \pm 1$ energy levels with an external magnetic field. [1] T. V. Tscherbul and P. Brumer, Phys. Rev. Lett. 113, 113601 (2014). [2] A. Dodin, T. V. Tscherbul, and P. Brumer, J. Chem. Phys. 144, 244108 (2016). [3] S. Koyu and T. V. Tscherbul, arXiv:1712.04625 (2017).

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