

Abstract Submitted  
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**NV dark state dynamics** DAVID LE SAGE, NIR BAR-GILL, CHINMAY BELTHANGADY, DAVID GLENN, Harvard-Smithsonian, ALEXEI TRIFONOV, Harvard, RONALD WALSWORTH, Harvard-Smithsonian — We present a study of the dynamics of light-induced transitions between the bright and the dark states of the negatively charged NV center in diamond. We investigate two proposed physical mechanisms for the origin of the long-lived dark state, namely charge conversion and an unidentified singlet state. Finally we investigate the dependence of these dynamics on the NV spin state for possible application in super-resolution microscopy and enhanced-contrast magnetometry.

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