Abstract Submitted
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Alkali atoms in solid parahydrogen[1] SUNIL UPADHYAY, JONATHAN WEINSTEIN, University of Nevada, Reno — We grow solid parahydrogen matrices doped with alkali atoms at densities from 10^{16} to 10^{18} cm^{-3}. We prepare the atomic spin state of the implanted atoms with optical pumping, and measure the spin state with optical spectroscopy. The combination of high atomic densities, optical addressability, and long coherence times make this a promising experimental platform for applications such as magnetometry. We compare optical properties and spin coherence for different alkali atoms.

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