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Optical properties of atoms in solid parahydrogen[1] DAVID LANCASTER, UGNE DARGYTE, SUNIL UPADHYAY, JONATHAN WEINSTEIN, University of Nevada, Reno — The favorable spin coherence properties of alkali atoms trapped in solid parahydrogen make them a promising experimental resource. The optical properties of these atoms are key to using them as sensors and in other applications. To date, our work has used absorption spectroscopy to probe large-number samples. To use single atoms as quantum sensors will require fluorescence detection methods. This talk will describe our work to measure essential optical properties of atoms in parahydrogen: absorption, fluorescence, and optical cycling. Prospects for detecting single atoms in parahydrogen will be discussed.

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