Abstract Submitted
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Raman Sideband Cooling and Lattice Imaging of Lithium[1] HIL FUNG HARRY CHEUNG, IVAYLO S. MADJAROV, YOGESH SHARAD PATIL, SRIVATSAN CHAKRAM, MUKUND VENGALATTORE, Cornell University — We report on progress towards achieving Raman sideband cooling and site-resolved two-photon fluorescence imaging of fermionic Lithium. This work seeks to extend our nondestructive lattice imaging technique [1] demonstrated in ^{87}Rb to an atomic species with unresolved hyperfine structure. In addition to enabling in situ studies of a fermionic lattice gas, this technique opens new avenues for the creation and study of non-equilibrium dynamics in strongly correlated many-body systems and measurement-induced quantum control.

[1] Y. S. Patil *et al.* PRA 90, 033422 (2014)

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