

Abstract Submitted  
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**Probing an attractive Fermi lattice gas with measurements of doublon fraction** W. MORONG, L. SLATTERY, B. DEMARCO, University of Illinois — While the BEC-BCS crossover has been extensively studied in the case of a harmonically trapped ultracold Fermi gas, the corresponding problem in an optical lattice has received less attention, despite its relevance to the physics of superconducting materials. We characterize this system by studying the fraction of atoms in doubly-occupied sites, or doublons, which are the primary excitation for large interactions. We show that even moderate interactions can cause the system to fail to equilibrate as the lattice is turned on. We also study the lifetime of doublons following an interaction quench.

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