

Abstract Submitted
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A Quantum Gas Microscope for Ultracold Fermions LAWRENCE CHEUK, MATTHEW NICHOLS, MELIH OKAN, THOMAS LOMPE, MARTIN ZWIERLEIN, MIT — Ultracold atoms in optical lattices are ideal systems to study model quantum many-body physics in a clean and well-controlled environment. Experiments at Harvard and MPQ Munich using bosonic ^{87}Rb atoms in optical lattices have demonstrated the ability to detect and address atoms at the single-site level, revealing microscopic density distributions and correlations difficult to extract from bulk measurements. The goal of our experiment is to achieve such single-site control for a quantum gas of fermions. This allows for exploring physics that arise in strongly-correlated fermionic systems. In this talk, we present results of site-resolved fluorescent imaging of fermionic ^{40}K with high fidelity.

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