

Abstract Submitted  
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**Quantum Gas Microscope for Fermionic  $^{40}\text{K}$** <sup>1</sup> MELIH OKAN, MATTHEW NICHOLS, LAWRENCE CHEUK, HAO ZHANG, MARTIN ZWIERLEIN, Massachusetts Inst of Tech-MIT — In this poster, we present the recent experimental progress on our quantum gas microscope for fermionic  $^{40}\text{K}$ . We show our findings on in-situ studies of metallic, Mott insulating, and band insulating states of the two- dimensional (2D) Fermi-Hubbard model as well as the extension of these studies to explore spatial charge and spin correlations using spin-sensitive fluorescence imaging of ultracold 40 K atoms trapped in a square optical lattice. Subsequently, we report on furthering these studies of spatial correlations to lower temperatures.

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