

Quantum simulators: pointilist perspective on many-body physics

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I will discuss recent progress of the optical lattice emulators of the Fermi Hubbard model. The new feature of these experiments is availability of snapshots of many-body states with single particle resolution. I will review new insights from these experiments on the properties of doped Mott insulators, including demonstration of magnetically mediated pairing. I will also discuss how experiments with cold atoms provide new perspective on kinetic magnetism in moire materials.