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Abstract for an Invited Paper
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Quantum Gas Microscope - Simulating the Bose-Hubbard model and beyond¹

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The Quantum Gas Microscope enables high fidelity detection of single atoms in a Hubbard-regime optical lattice, bringing ultracold atom research to a new, microscopic level. I will report on investigating the Bose-Hubbard model by directly measuring number statistics and correlations across the superfluid - Mott insulator quantum phase transition. I will then give an outlook on how this enables creating novel phases in optical lattices and realizing quantum magnetism.

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