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Optical Lattice Experiments with Lithium-7 IVANA DIMITROVA, WILLIAM LUNDEN, NIKLAS JEPSEN, JESSE AMATO-GRILL, YICHAO YU, WOLFGANG KETTERLE, MIT, MIT TEAM — The light mass of bosonic lithium makes it a potentially lucrative platform for exploring superexchange-driven physics in an optical lattice. The light mass of bosonic lithium makes it a potentially lucrative platform for exploring superexchange-driven physics in an optical lattice. We report on the observation of the superfluid-to-Mott insulator transition in our system and the restoration of coherence; the technical challenges related to the high recoil energy of lithium; and our first investigations using the system.

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