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**Evolution of insulator-metal-insulator transitions under staggered lattice potentials** AARAM JOO KIM, MOO YOUNG CHOI, Department of Physics and Astronomy and Center for Theoretical Physics, Seoul National University, Seoul 151-747, Korea, GUN SANG JEON, Department of Physics, Ewha Womans University, Seoul 120-750, Korea — It is known that in the ionic Hubbard model metallic phases exist between band and Mott insulators in the presence of staggered lattice potentials. We investigate how the phase diagram depends on the strength of the staggered lattice potential, by means of the dynamical mean-field theory combined with the continuous-time quantum Monte Carlo method. Observed at finite temperatures is the crossover between metallic and band insulating phases while a first-order transition ending up with a critical point shows up between the metallic and Mott insulating phases. It is discussed how such transition behaviors evolve as the lattice potential grows at low temperatures.

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