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Motional dynamics in a matter-wave emitter array[1] JOONHYUK KWON, YOUNGSHIN KIM, ALFONSO LANUZA, MICHAEL STEWART, DOMINIK SCHNEBLE, Stony Brook University — Recent work on matter-wave emission from atoms trapped in optical lattices [1] has enabled studies of exotic emission phenomena, including the formation of spatially extended bound states. Their presence has been predicted to give rise to a modification of the Hamiltonian governing the motional dynamics of atoms in the lattice. In this talk, we will discuss our ongoing theoretical and experimental efforts in characterizing the effective tunneling between lattice sites.

[1] L. Krinner, M. Stewart, A. Pazmio, J. Kwon, D. Schneble, Nature 559, 589592 (2018)

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