Abstract Submitted
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Moire Localization[1] BIAO HUANG, University of Pittsburgh, W. VINCENT LIU, University of Pittsburgh, Shanghai Jiaotong University, and Southern University of Science and Technology of China — We discuss a new mechanism to realize the Anderson localization through the engineering of Moire superlattice potentials. Unlike in the usual Aubry-Andre models, the two lattice potentials producing the Moire pattern have exactly the same lattice geometry and wavelengths, but only mismatched up to a global rotation. We show that there are crucial differences between the commensurate and incommensurate Moire patterns, with the former one holding usual reconstructed Bloch waves while the latter one exponentially localized eigenstates. The unusual localization length and experimental signatures are also demonstrated.

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Biao Huang
University of Pittsburgh

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