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# Strongly correlated electrons and excitons in moire superlattices (ONLINE presentation)

*jeudi 16 septembre 2021 14:00 (1 heure)*

Twisted bilayers of transition metal dichalcogenides offer a wealth of new phenomena, ranging from dipolar excitons to correlated insulator states. An example of qualitatively new phenomena in this system is our recent observation of an electrically tunable two-dimensional Feshbach resonance in exciton-hole scattering [1], which allows us to control the strength of interactions between excitons and holes located in different layers. Our findings enable hitherto unexplored possibilities for optical investigation of many-body physics, as well as realization of degenerate Bose-Fermi mixtures with tunable interactions.

[1] I. Schwartz, Y. Shimazaki, C. Kuhlenkamp. K. Watanabe, T. Taniguchi, M. Kroner, A. Imamoglu, arXiv:2105.03997 (2021).

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