

# Moiré Luttinger Liquids in Two Dimensions

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Interacting electrons in metals are typically described by the well-established Fermi liquid theory. One known exception is the interacting one-dimensional (1D) conductors, in which electrons only move along one spatial direction and are generally described by the Luttinger liquid model instead at low temperatures. The 1D Luttinger liquids host a set of interesting phenomena, including the power law suppression of the density of states at Fermi energy and the spin-charge separation. Can the novel Luttinger liquid phenomena, typically expected in a 1D system, emerge in a two-dimensional (2D) system at low temperatures? In this talk, I aim to address this question based on our recent experiments on twisted bilayer  $\text{WTe}_2$  ( $t\text{WTe}_2$ ). I will argue that the  $t\text{WTe}_2$  moiré superlattice provides an excellent platform for studying emergent Luttinger liquids in an anisotropic 2D system and may be related to various coupled-wire models.