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Charge-density wave formation in interacting two-dimensional electronic systems with Landau level mixing PETER SMITH, MALCOLM KENNETT, Simon Fraser University — Anisotropic transport in half-filled Landau levels has been explained in terms of charge-density wave (CDW) formation. We use the Hartree-Fock approximation to study the influence of electron-electron interactions and Landau level mixing on the formation of CDWs in two-dimensional electron and hole systems. For the situation of two nearly degenerate eigenstates, we construct a Landau free-energy theory appropriate for competing order parameters that allows for both striped and triangular CDW formation. We find the possibility of coexisting CDW ordering in the two states, along with possible hysteretic behaviour. This physics might be realized using an external parameter such as spin-orbit coupling to tune states into near degeneracy.

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