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Stripes in quasi 2D rare-earth tellurides HONG YAO, Department of Physics, Stanford University, Stanford, CA 94305, JOHN ROBERTSON, Department of Physics, Stanford University, Stanford, CA 94305, EUN-AH KIM, Department of Physics, Stanford University, Stanford, CA 94305, STEVEN KIVELSON, Department of Physics, Stanford University, Stanford, CA 94305 — Even though the rare-earth tellurides are tetragonal materials with quasi-2D band structure, they have a hidden 1D character. The consequent, near-perfect Fermi surface nesting results in the formation of a charge density wave (CDW) state. Interestingly, the CDW is unidirectional (?striped?), spontaneously breaking not only translational symmetry, but the discrete rotational symmetry, as well. We show that there are two possible ordered phases consistent with the band structure: A bidirectional ?checkerboard? state would occur if the CDW transition temperature is sufficiently low, whereas the observed striped state is favored when the transition temperature is larger. We comment, as well, on the implications of this finding for the issue of stripes vs. checkerboards in more strongly correlated systems, such as the cuprates.

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