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Transport studies in the incommensurate charge density wave series RTe_3 PHILIP WALMSLEY, SIMON AESCHLIMANN, Stanford University, PAULA GIRALDO GALLO, NHMFL, Florida State University, IAN FISHER, Stanford University — The quasi-2D rare-earth tritelluride compounds (RTe_3: R=La-Tm) are a model series in which to study incommensurate charge density waves (iCDWs), with the interplay between Fermi surface nesting and electron-phonon coupling forming an open and lively area of research. The slight orthorhombicity in the 2D Te bilayer that forms the Fermi surface favors a single-domain unidirectional iCDW along the c-axis, with a second, perpendicular unidirectional iCDW forming at lower temperatures in the heavier members (R=Tb-Tm). It remains unclear how the lower temperature iCDW disappears with rare earth substitution (chemical pressure) and whether there is an associated quantum phase transition. We present recent transport measurements that study the evolution of the two iCDWs as they are tuned across the enormous phase-space offered by these compounds, with a particular focus on the in-plane anisotropy and Fermi-surface geometry.

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