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Anisotropic symmetry breaking in two-dimensional charge density waves of $ErTe_3$ investigated by femtosecond electron crystallography[1]

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— Electron-phonon interactions can give rise to various charge-ordered states, especially at low dimensions, where Fermi surface is more prone to form nesting. Rare earth tritellurides compound $ErTe_3$ develops charge density waves (CDW) along two perpendicular directions at different temperatures. By directly probing the order parameters of the two CDWs using femtosecond electron crystallography under different temperatures and driving photonic energy, we investigated the emergences of competing CDW orders in a dynamical phase diagram. The anisotropic symmetry breaking and the role of electron-phonon coupling, and photo-doping effect are discussed in reference to other CDW systems.

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[2]Experiment
[3]Theory
[4]Sample growth

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