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Depairing Current in the Pair-Density Wave State JONATAN WÅRDH, MATS GRANATH, University of Gothenburg — A frustrated pair-density wave (PDW) state has been proposed as a mechanism for decoupling layers at 1/8 doping in LBCO, giving rise to an effective 2D SC. We investigate the destruction of the PDW-order in the presence of a current. We consider a BCS-like calculation with stripe-like spatially modulated pair-hopping. Without any external driven current this model has two states: a time-reversal invariant PDW state of Larkin Ovchinnikov-type, and a state with broken time-reversal symmetry of Fulde Ferrell-type. We observe a highly anisotropic critical current $J_{\parallel}/J_{\perp} \sim 25$, where $J_{\parallel}$ runs along the PDW ordering vector. In the PDW state, driving a current along the ordering vector induces a first order transition to a current carrying homogeneous SC-state. Further we discuss experimental signatures.

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