Correlated hopping and orbital currents in a spinless fermion lattice model HSU LIU, Cavendish Laboratory, Cambridge University, DARRELL SCHROETER, Reed College — We investigate the effect of correlated hopping on the stability of orbital current patterns in a Hubbard-type model. We consider spinless fermions moving on an array of square plaquettes coupled by weak hopping. We derive a pseudospin model, where the components of the pseudospin describe plaquettes with either orbital currents or charge or bond density, at fourth order in degenerate perturbation theory. This work extends the model of Pujari and Henley [PRB **80**, 085116] to fourth order in perturbation theory where correlated hopping is first present. At this order, the degeneracy between charge and orbital current order seen in their work disappears.

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