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Intermediate coupling phase diagrams of the cuprates¹ ROBERT MARKIEWICZ, Northeastern University, JOSE LORENZANA, University of Rome 'La Sapienza', GOETZ SEIBOLD, University of Cottbus, ARUN BANSIL, Northeastern University — We analyze the competing (non-superconducting) phases in the cuprates in the intermediate coupling regime via Gutzwiller approximation (GA) + RPA. The magnetic GA+RPA phase diagram was benchmarked for the $t - t' - U$ model[1]. The leading instabilities are associated with Fermi surface nesting, generally corresponding to a double nesting criterion, and are different for different cuprates. While electron-doped cuprates are generally associated with commensurate (π, π) nesting [2], there are competing incommensurate phases in the hole doped cuprates. Magnetic and charge-order phase diagrams will be compared. [1] L.F. Tocchio, *et al.*, Phys. Rev. B **78**, 041101(R) (2008). [2] C. Kusko, *et al.*, Phys. Rev. B. **66**, 140513(R) (2002); T. Das, *et al.*, Phys. Rev. Lett. **98**, 197004 (2007).

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