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Gutzwiller Charge and Magnetic Phase Diagrams of Cuprates<sup>1</sup> ROBERT MARKIEWICZ, Northeastern University, JOSE LORENZANA, Sapienza, University of Rome, GOETZ SEIBOLD, University of Cottbus, Germany, ARUN BANSIL, Northeastern University — We extend our previous analysis of the magnetic phase diagram of the cuprates to look for charge instabilities, either purely electronic or involving electron-phonon coupling, employing Gutzwiller approximation GA+RPA calculations of the Hubbard model. In the absence of phonons we find an overscreening instability for large doping at  $(\pi, \pi)$ . In the presence of electronphonon coupling, we find a rich response to Fermi surface nesting, very similar to the magnetic case, and in this case the instability criterion can be formulated as a generalized Stoner criterion. In the hole-doping regime, where evidence exists for a nonmagnetic (stripe) pseudogap, we find competing instabilities. Since the same susceptibility peaks are present for both spin and charge excitations, differences in preferred q-vectors arise from the q-dependence of the interaction  $U_{eff,q}$ .

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