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Optical properties of underdoped high T_c superconductors from a phenomenological model E. ILLES, E.J. NICOL, University of Guelph, J.P. CARBOTTE, McMaster University — We calculate the optical conductivity predicted by a phenomenological model for the pseudogap state given by Yang, Rice and Zhang [1]. In particular, we present results for both pseudogap and superconducting states as a function of doping. In addition to the conductivity, we examine the optical self-energy (i.e. the optical scattering rate and mass renormalization) and discuss our results in light of experiment.
[1] K.Y. Yang, T.M. Rice and F.C. Zhang, Phys. Rev. B 73, 17541 (2006).

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