Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Condensation of interacting excitons in a microcavity ANSON CHEUNG, BEN SIMONS, University of Cambridge, PETER LITTLEWOOD, University of Cambridge — We consider the ground state of excitons interacting both via their Coulomb forces and via photons in a microcavity. We propose a mean field ansatz for the wavefunction, generalised from [NOZ1], that encapsulates the physics of both high and low densities. We discuss the phase diagram in regimes where the photon- or Coulomb-mediated coupling is dominant, and the excitations have a character that is either excitonic, or polaritonic, or an electron-hole plasma.

[NOZ1] Comte, C. and Nozières, P., J. Physique **43**, 1069–1081 (1982)

Anson Cheung
University of Cambridge

Date submitted: 03 Dec 2004 Electronic form version 1.4