Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Polariton Condensation in CdTe Microcavities: the phase diagram. MARZENA SZYMANSKA, University of Oxford, JACEK KASPRZAK, Universite J. Fourier - Grenoble, JONATHAN KEELING, University of Cambridge, FRANCESCA MARCHETTI, University of Oxford, REGIS ANDRE, Universite J. Fourier - Grenoble, PETER LITTLEWOOD, University of Cambridge, DANIEL LE SI DANG, Universite J. Fourier - Grenoble — The first realisation of a polariton condensate has been very recently achieved in a CdTe microcavity [Kasprzak et al., Nature 443, 409 (2006)]. The direct comparisons with theoretical calculations reveal crucial information about the nature of the condensed phase for such composite light-matter particles. In particular, we compare the phase boundaries obtained experimentally, for different values of detuning and cryostat temperature, with those evaluated theoretically using a model which takes into account features of microcavity polaritons such as their reduced dimensionality, their internal composite structure, the disorder in the quantum wells, the polariton-polariton interaction, and their finite lifetime.

Marzena Szymanska
University of Oxford

Date submitted: 28 Nov 2006 Electronic form version 1.4