Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Optical Detection of Bilayer Exciton Condensation JUNG-JUNG SU, ALLAN H. MACDONALD, The University of Texas at Austin, Department of Physics — The generation of quantum degenerate exciton clouds in semiconductor bilayers and the detection of their anticipated Bose condensation has generated both theoretical and experimental interest. Recently the angular distribution of luminescence from a coherent trapped bilayer exciton system was recently calculated based on a bosonic description of the excitions. Motivated by the expectation that the condensation temperature in these systems will be maximized when the exciton density exceeds the area per isolated exciton, we have examined how the underlying Fermi statistics, which is relevant in this regime, alters the luminescence properties. We will report on a luminescence spectrum calculation which starts from a Bogoliubov description of the condensed ground state.

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Date submitted: 20 Nov 2006 Electronic form version 1.4