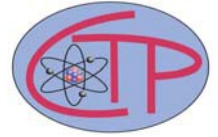




NEW YORK CITY COLLEGE OF TECHNOLOGY
Physics Department
Center for Theoretical Physics



Polariton Condensation

Presented by:

Professor Peter Littlewood

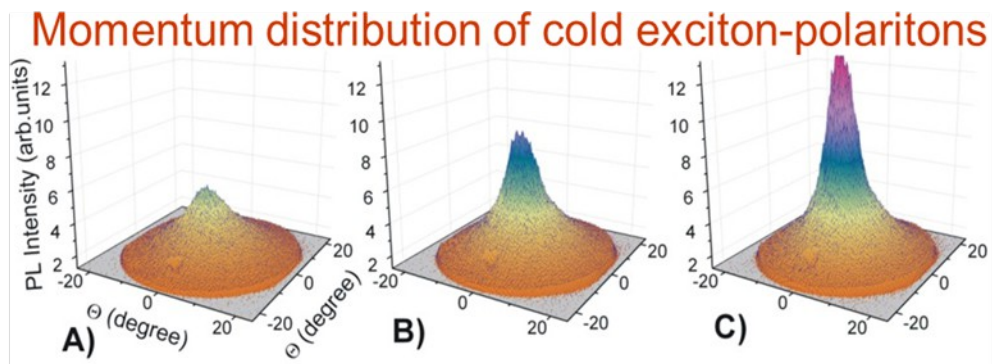
**Argonne National Laboratory, Argonne IL, USA
James Franck Institute, University of Chicago, USA**

**Thursday, January 31 at 12:00 PM
Namm, Room 823**

Abstract

Macroscopic phase coherence is one of the most remarkable manifestations of quantum mechanics, yet it seems to be the inevitable ground state of interacting many-body systems. In the last two decades, the familiar examples of superfluid He and conventional superconductors have been joined by exotic and high temperature superconductors, ultra-cold atomic gases, both bosonic and fermionic, and recently systems of excitons, magnons, and exciton-photon superpositions called polaritons, the subject of this talk.

Engineering of optical microcavities make use of the mixing of electronic excitations with photons to create a composite boson called a polariton that has a very light mass, and recent experiments provide good evidence for a high-temperature Bose condensate. Polariton systems also offer an opportunity to use optical pumping to study quantum dynamics of a many body system outside equilibrium, in a new kind of cold atom laboratory.



Kasprzak et al Nature 443, 409 (2006)

Light refreshments will be served.