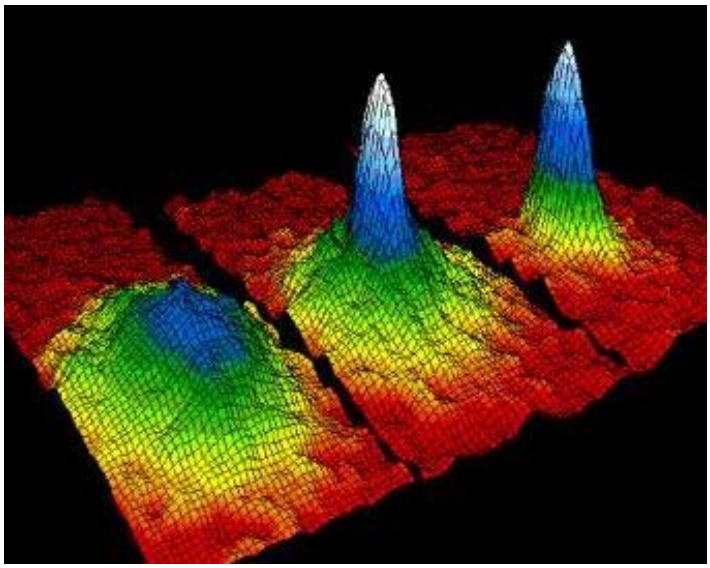
NEW YORK CITY COLLEGE OF TECHNOLOGY
Joint Physics and Mathematics Colloquium

Bose-Einstein Condensation and Superfluidity of Quasiparticles in Quantum Wells



Presented by:
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Thursday, April 17, at 12:45 PM
Namm 804

Phase transitions in two-dimensional systems with spatially separated electrons and holes in layered structure of coupled quantum wells are discussed. Phase diagram, spectra and superfluidity of the liquid of spatially separated electron-hole pairs (or dipole excitons) are analyzed. The influence of the random fields (due to impurities, roughness of boundaries etc.) on the superfluidity and Bose-Einstein condensation (BEC) of excitons and magnetoexcitons in strong magnetic field is analyzed. . The phase transition magnetoexciton superfluid-magnetoexciton glass in the presence of strong magnetic field and disorder is discussed. A theory of BEC and superfuidity of quasi-two-dimensional (2D) exciton polaritons in a semiconductor microcavity with embedded quantum well, when there is an in-plane parabolic potential for the exciton energy, which also shifts the resonance with the photon mode will be discussed.

Light refreshment will be served