THEORETICAL PHYSICS SEMINAR

Title: Suppression of phase separation in warm condensate mixtures

Speaker: Arko Roy, THEPH PRL

Date/Time/Venue: 30th April (Thursday)/4:00 PM/ Room No. 469

ABSTRACT

We shall discuss about the role of thermal fluctuations in binary condensate mixtures of dilute atomic gases. We use Hartree-Fock-Bogoliubov with Popov approximation to probe the impact of non-condensate atoms to the phenomenon of phase-separation in two-component Bose-Einstein condensates. We demonstrate that, in comparison to $T=0$, there is a suppression in the phase-separation of the binary condensates at $T\neq0$. This arises from the interaction of the condensate atoms with the thermal cloud. We also show that, when $T\neq0$ it is possible to distinguish the phase-separated case from miscible from the trends in the correlation function. However, this is not the case at $T=0$.

All are welcome to attend