

ICTS Seminar

Title : Fermi surface mismatch and exotic superfluid phases

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Date : Thursday, January 10, 2019

Time : 11:30 AM

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : In this talk I would discuss about the behavior of Fermi superfluids involving imbalance in the population of the fermionic species. The consequence of such an imbalance is the realization of exotic superfluid state viz. the Fulde-FerrellLarkin-Ovchinnikov (FFLO) state. Unlike the conventional BCS superconductors the imbalance in population gives rise to finite momentum pairing between the fermions, thereby leading to superfluid state with spatial modulations. Another possible route to engineer imbalanced Fermi superfluid is as Fermi-Fermi mixture. A situation where fermion species with unequal mass pair up to give rise to superfluidity. Non trivial quasiparticle features along with multiple pseudogap regimes are expected to serve as experimental signatures of Fermi-Fermi mixtures. I would discuss the finite temperature behavior of such systems and about their possible experimental realizations