



Colloquium

Exotic Superconductivity in Graphene Multilayers

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Host: Maksym Serbyn

Recently, untwisted graphene multilayers have emerged as a rich platform to study quantum many-body physics. I will describe recent experiments on a stack of three layers of graphene, where superconductivity was recently discovered at the boundary between states with different broken symmetries. Experiments hint to an unconventional mechanism for superconductivity, where counterintuitively, the binding of electrons into pairs originates from the repulsive Coulomb interaction between them. Even more interestingly, one of the superconducting phases in trilayer graphene seems to be an unusual fully spin polarized triplet state. The topology of its order parameter space, that intertwines the phase of the superconducting condensate with the spin polarization, can lead to unusual phenomena, such as anomalous supercurrent dissipation and a fractional-period ac Josephson effect.

Tuesday, April 29, 2025 11:00am - 12:00pm

Office Bldg West / Ground floor / Heinzel Seminar Room (I21.EG.101)



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