



Seminar/Talk

Phase Diagram of InAs-Al Heterostructures

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Superconductor-semiconductor hybrid nanowires have been predicted to host a topological phase in the bulk and Majorana zero modes at the ends of the wire. Probing the full extent of this prediction has been challenging since the traditional two-terminal device geometries are limited to probe the local density of states at one end of the wire. In this context, we recently developed three-terminal devices which allow for the measurement of the transport gap in the bulk of the wire, as well as the detection of correlated local states at both ends of the wire. In this seminar, I will discuss the protocol we employ to map the phase space (chemical potential and magnetic field) of these devices to identify regions consistent with topological superconductivity and to extract the topological gap. Further, I will present both simulated and measured phase diagrams of three-terminal devices based on InAs-Al heterostructures, which are consistent with the emergence of topological superconductivity and a topological gap of around $30\mu\text{eV}$.

Tuesday, April 26, 2022 11:00am - 12:00pm

Heinzel Seminar Room / Office Bldg West (hybrid enabled) (I21.EG.101)



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