

EMERGENCE OF MAJORANA STATES IN ATOMIC-SCALE HYBRID SYSTEMS

ROLAND
WIESENDANGER

Interdisciplinary Nanoscience
Center Hamburg (INCH)
University of Hamburg
Germany

The realization of a quantum computer is one of the greatest challenges in solid-state physics. However, conventional schemes suffer from the susceptibility of quantum bits to quantum decoherence, resulting in unwanted errors. The emerging field of topological quantum computing offers an exciting new approach where topologically protected states can avoid processes leading to quantum decoherence. Here, Majorana bound states - the solid-state analogue to Majorana fermions which are particles being their own antiparticles - are promising candidates. I will discuss novel platforms to realize, tune and manipulate Majorana states based on bottom-up fabrication of atomically well-defined magnet-superconductor hybrid systems. I will conclude with future perspectives of this interdisciplinary field of research.

FRIDAY,
18.05.2018

2:00 PM

CFEL
SEMINAR ROOMS I-III

