Hamburg Photon Science Colloquium

REALIZING TOPOLOGICAL QUANTUM COMPUTING: FROM MATERIALS TO ALGORITHMS

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The realization of fault-tolerant quantum computing (FTQC) remains a central scientific challenge in quantum information science. A promising platform for FTQC is provided by Majorana zero modes (MZMs) that exist in topological superconductors. These exotic particles possess a non-Abelian braiding statistic, and allow to store information non-locally, thus rendering them robust against external perturbations. In this talk, I will review recent progress in identifying material platforms for MZMs, and progress in the simulation of fault-tolerant quantum algorithms.

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