



Dr. Chetan Nayak
Microsoft, USA.



Date & Time:

7th July, 2025 @ 10:00 AM IST



Venue:

Classroom-4, TCG CREST

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Title – Majorana-Based Topological Qubits

Abstract

A topological qubit based on Majorana zero modes requires a reliable method for tuning it into the topological phase and a method for fast and accurate measurement of the topological charge of collections of anyons. In this talk, I will discuss a topological qubit consisting of 4 Majorana zero modes (MZMs) on two parallel InAs-Al topological superconducting wires. The device is tuned into this configuration by passing the topological gap protocol (TGP) on both wires at the same magnetic field. The native operations are interferometric single-shot measurement of the parity of two MZMs on the same wire and of two MZMs on different wires which are, respectively, Pauli-Z and Pauli-X measurements. Our results are consistent with a theoretical error model.

Organized by:

CQuERE (Centre for Quantum Engineering, Research and Education), TCG CREST, Kolkata, INDIA

For more details, please visit the website: **<http://www.tcgcrest.org/iyq2025>**

For any queries, feel free to contact us through the email: **iyq.2025@tcgcrest.org**