International Year of Quantum Science and Technology (IYQ)-2025, at TCG CREST (Kolkata, India)

Dr. Abhinav Kandala

IBM Quantum, New York, USA.

Date & Time:

11th August, 2025 @ 5:30 PM IST

Venue:

Classroom-4, TCG CREST

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Title – Accurate quantum computing

Abstract

The fundamental building blocks of quantum computers — quantum bits or qubits — have error rates that are over 20 orders of magnitude worse than their classical counterparts. How can one hope to perform accurate calculations with such noisy computers? Fortunately, there exists a well-accepted solution to this challenge, in theory — quantum error correction. In practice though, this requires encoding quantum information in a large network of qubits, which remains a significant engineering challenge. In the absence of such a large-scale error corrected quantum computer, the question remains — is it possible to perform accurate computations with existing noisy processors? Can these computations be performed at scales that challenge classical computation? This talk will address these questions, while presenting an overview of the state of superconducting quantum computing today, and a view into where this technology will evolve in coming years.

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