Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad - 500107

Internal Webinar

Quantum Information Processing with Abelian and Non-Abelian Qubits

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Quantum information processing can happen using three broad formalisms - gate-based, measurement-based and functional quantum computation. I shall be discussing my work till now, in the realm of quantum information processing, particularly in measurement-based quantum computation and tasks such as teleportation and quantum secret sharing. In this talk, I shall be expanding on the idea of generation and characterisation of qubits in condensed matter and optical systems (with a recent formulation of a Hyper-CPHASE gate also highlighted). I shall be looking at ideas of resource-theory to look at optimum resource-states, given an entangler. I shall also briefly touch upon principles of non-abelian anyonic quantum computation using Majorana fermions.

Tuesday, Jun 30th 2020

2:30 PM