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

Colloquium

Building our Universe with Qubits

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The success of the standard model of particle physics is based on the quantum theory of fields where the basic assumptions lead to mathematical infinities. While the theory of renormalization helps us understand why these infinities are in fact harmless, they are still difficult to handle computationally, especially within the strongly interacting sector that describes nuclear physics. Recent efforts to overcome these computational bottlenecks using a quantum computer is motivating us to think of new ways to build our universe with qubits. I will discuss the basic ideas behind this approach and some recent results that suggests that this may indeed be possible.

Wednesday, Jul 31st 2019

4:00 PM (Tea/Coffee at 3:30 PM)

Auditorium, TIFR-H