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## Non Abelian Lattice Gauge Theories: From Quantum Simulation to Ergodicity

*Friday, November 15, 2024 2:00 PM (1 hour)*

Non-abelian gauge theories play a pivotal role in our description of the universe, from low to high-energies, but their complexity hinders our understanding of their emergent phenomena. In this talk, we will consider a one-dimensional  $SU(2)$  lattice gauge theory with dynamical matter, the simplest theory supporting the existence of baryons and mesons. We will show how to build a quantum simulator based on trapped ions of this theory and which phenomena can be explored with this experimental toolbox. Moreover, we will analyse real-time dynamics phenomena related to ergodicity, first of all the emergence of quantum scars, in various dynamical regimes.

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