

MONDAY

# COLLOQUIUM

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## Dual-unitary circuits as models of many-body quantum and classical chaos

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7 Apr 2025 (Monday) | 16:00 Hrs (Tea / Coffee 15:45 Hrs) | Venue: TIFRH Auditorium

Dual unitaries are maximally entangled unitaries, the Bell-states of the operator world, that enjoy a certain “space-time duality”. I will discuss how they are used in quantum circuits which are of interest as models of many-body systems with maximal chaos, but still endowed with a certain level of solvability. An impressive recent IBM implementation of dual-unitary circuits involves a 91 qubit simulation, showing the rapid scrambling of information and decay of correlations. I will also discuss what their classical counterparts are and how new classical many-body systems constructed from them may also be insightful to study.