



THE UNIVERSITY OF
CHICAGO

THE COMMITTEE ON
COMPUTATIONAL AND
APPLIED MATHEMATICS

COLLOQUIUM

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Quantum State Preparation via Open Quantum System Dynamics: From Provable Guarantees to Near-Term Implementation

THURSDAY, October 15th at 4:00 PM

Jones 303, 5747 S. Ellis Ave. Chicago, IL 60637

ABSTRACT

Preparing quantum many-body states is a foundational challenge in condensed matter physics, quantum chemistry, and materials science. In this talk, I will introduce a class of quantum state-preparation algorithms based on dissipative dynamics that have been developed over the past three years. I will begin with the intuition behind dissipative quantum algorithms, followed by early approaches based on Lindbladian dynamics. Building on this foundation, I will then present a new framework developed last year that retains the theoretical advantages of Lindbladian dynamics while being more compatible to near-term implementation.

Organizers:

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