UNIVERSITY of HOUSTON

Department of Mathematics

Scientific Computing Seminar

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Structure-Preserving numerical method for Lindblad Master equation

Thursday, March 26, 2026
1 PM- 2 PM
Room 646 PGH

Abstract:

In this talk, we consider numerical discretization for Lindblad Master equation, which is a fundamental model for open quantum system. We design high order methods that are completely positive and trace preserving (CPTP). This is achieved by Lawson integrator or Nested Picard integrator. To deal with curse of dimensionality, we introduce tensor train compression schemes for computing systems with many qubits. This is joint research with D. Appelo, J. Hu and P. deMalstro.