QPM Colloquium

پژوهشگاه دانش‌های بنیادی

Why Is Krylov Space Everywhere? From Quantum Dynamics to Complexity

Invited Speaker
Mohsen Alishahiha

Date
Wednesday, July 15, 2026

Time
11:00

Description

This talk explains why Krylov space provides a natural dynamical basis for quantum physics. Starting from holographic complexity and black-hole interior growth, it introduces Krylov methods as a way to reduce complicated evolution to motion on a one-dimensional Lanczos chain. The talk reviews Krylov complexity as a probe of operator growth and chaos, then presents recent developments: saturation and peak behavior, the Krylov distribution as a static resolvent probe, and Krylov methods for computing quantum Fisher information with controlled errors.

Venue
Room D, Third Floor, Farmanieh Building, IPM

Link
skyroom.online/ch/schoolofquantumphysicsandmatter/weeklyseminars

Scan for seminar link

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More info qpm.ipm.ac.ir