



## 物理学术报告

## Physics Seminars (biweekly)

- Title:** Symmetry restoration and quantum Mpemba effects in chaotic and localization systems
- Speaker:** SHIXIN ZHANG (张士欣), Institute of Physics CAS
- Time:** 4:00 pm, Tuesday, September 3, 2024
- Venue:** Conference Hall 104, Science Building, Tsinghua University

### Abstract

The nonequilibrium dynamics of quantum many-body systems have attracted growing attention due to various intriguing phenomena absent in equilibrium physics. One famous example is the quantum Mpemba effect, where the symmetry is restored faster under a symmetric quench from a more asymmetric initial state. In this talk, we investigate symmetry restoration dynamics and the associated quantum Mpemba effects in both quantum chaotic and many-body localization systems with theoretical tools such as random quantum circuits and the effective models for MBL. We study symmetry restoration behaviors for different initial states and internal symmetries and present a unified framework to understand these diverse phenomena with the lens of quantum thermalization.