ICTS String Seminar (HYBRID)

Title : Krylov complexity for quantum Floquet dynamics

Speaker : Amin A. Nizami (Ashoka University)

Date : Wednesday, 23rd August, 2023

Time : 03:00 PM (IST)

Abstract : Krylov complexity is a dynamical quantity of importance in holography and in the study of quantum chaos, operator growth and scrambling in many body systems. We extend the notion of Krylov complexity to time-dependent quantum systems. For periodic time-dependent (Floquet) systems, we give a natural and general method for doing the Krylov construction based on Arnoldi iteration and then define operator K-complexity for such systems. Focusing on kicked systems, in particular the quantum kicked rotor on a torus, we outline results of a detailed numerical study of the growth of the Krylov space dimension and the time dependence of Arnoldi coefficients as well as of the K-complexity when the coupling constant interpolates between the weak and strong coupling regime. Based on https://arxiv.org/abs/2305.00256 with Ankit Shrestha.

Venue : **Offline:** Madhava Lecture Hall (ICTS)

Online: Please click the below link to join the seminar

https://icts-res-in.zoom.us/j/88092766911?pwd=R3ZrVk9yeW96ZmQ4ZG9KRzVhenRKZz09