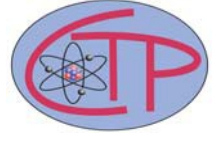




*NEW YORK CITY COLLEGE OF TECHNOLOGY*  
**Physics Department**  
**Center for Theoretical Physics**



# **Thermalization and localization in closed quantum many-body systems**

*Presented by:*

**Professor David Huse**

**Princeton University**  
**Princeton, NJ, USA**

**Thursday, December 13 at 11:45 AM**  
*Note that we will begin 15 minutes earlier than usual*  
**Namm, Room 823**

## **Abstract**

First I will discuss the Eigenstate Thermalization Hypothesis (ETH), which appears to be true for the broad class of many-body quantum systems that thermally equilibrate under the dynamics given by their own Hamiltonian. The one generic exception to ETH that is known is many-body Anderson localization. We have studied a model spin chain that shows both thermalizing and localized phases, with a dynamic quantum phase transition between them that occurs even at arbitrarily high temperature. I will highlight some of the many important differences between the two phases and describe some of our results that (roughly) locate the phase transition and constrain some of its properties.

Work in collaboration with Arijeet Pal and Vadim Oganesyan.

*Light refreshments will be served.*