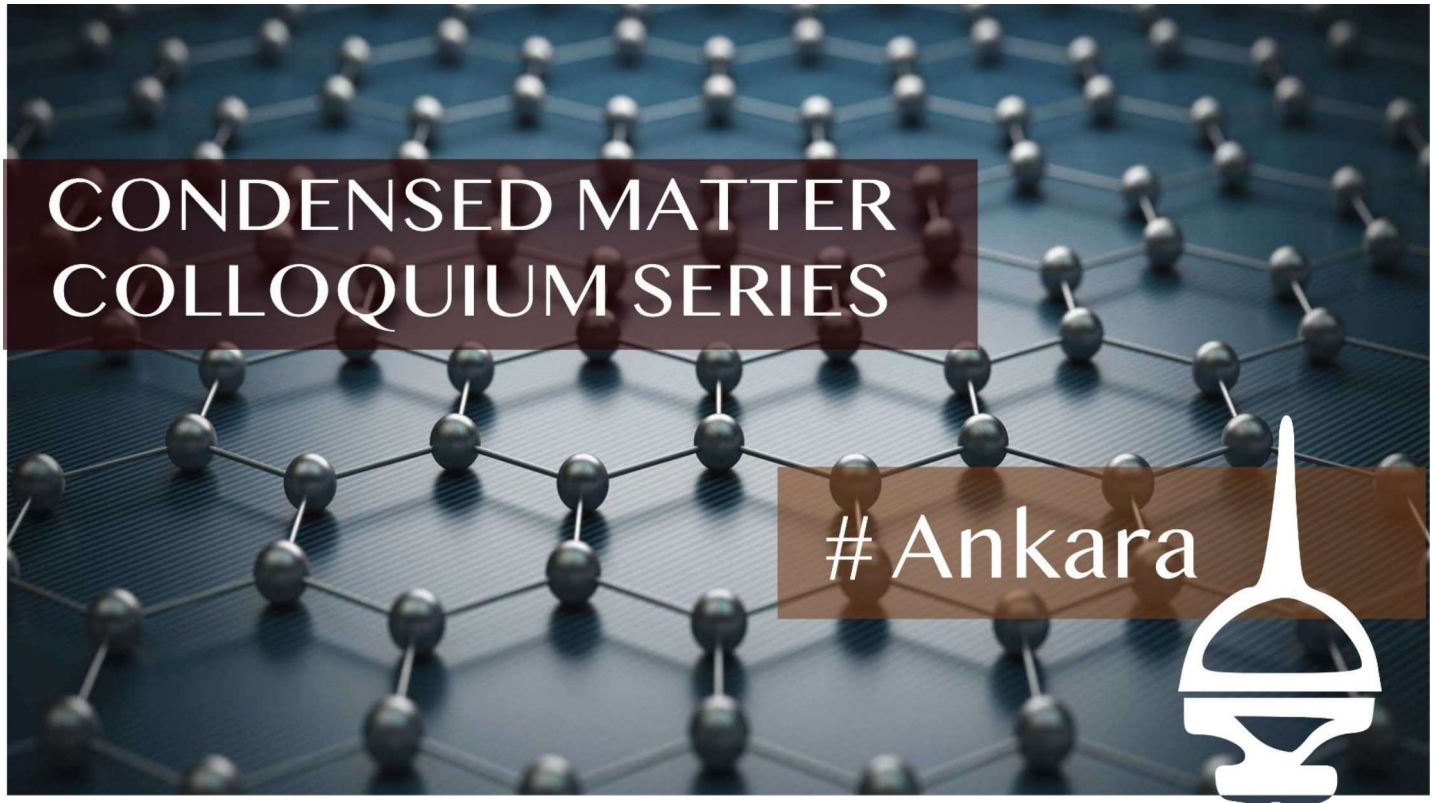

Po-Yao Chang

National Tsing Hua University

Some aspects in many-body quantum dynamics: from multi-channel Kondo impurities to entanglement transition in SU(1,1) periodically driven systems

Quantum dynamics plays an essential role in many-body systems. It not only describes the time evolutions of observable quantities but also reveals how information is processed in the quantum systems. In this talk, we first demonstrate some universal properties of the evolution of entanglement spectra under generic quantum dynamics, providing a deeper understanding of quantum thermalization. Secondly, we investigate the transient dynamics and long-time quasi-equilibrium properties in multi-channel Kondo impurity systems using the large-N Schwinger-Keldysh approach. We observe the prethermalization in these systems, in which the effective temperatures between the impurity spin and the composite boson are different. Lastly, we show that by using the SU(1,1) algebra, we can define non-equilibrium phases in terms of entanglement properties. We provide examples such as Bose-Einstein Condensate (BEC) quench dynamics and periodically driven quantum oscillators.

February, 27
Tuesday

19:00, (Ankara Time)

Click here for zoom link
Meeting ID: 432 931 6595
Password: 326852

Professor Po-Yao Chang joined the Department of Physics at National Tsing Hua University, Taiwan in February 2019. His primary research areas include quantum condensed matter physics, non-equilibrium quantum systems, topological phases, and strongly correlated quantum systems. He obtained his Ph.D. in physics at the University of Illinois at Urbana-Champaign (UIUC) in 2015. After graduating from UIUC, he held postdoctoral research positions at Rutgers University (2015), and the Max Planck Institute for the Physics of Complex Systems in Germany (2018). In recent years, Professor Chang's research has focused on the entanglement and topological properties of quantum non-equilibrium systems. He seeks to understand quantum thermalization phenomena through the evolution of entanglement spectra. Another research focus involves investigating the properties of many-body phases and phase transitions of non-Hermitian quantum systems—an area that has recently garnered significant international interest.

For more information visit
http://cmcolloq.bilkent.edu.tr

If you have any queries,, please contact oktel@fen.bilkent.edu.tr
If you'd like to sign up to the mailing list to receive announcements and remainder, please use:
https://forms.gle/dQM6CPqAXiaqLqBD6