

Joint CQSE & NCTS Seminar

2024
Nov. 29, Friday

Time: Nov. 29, 14:20 ~ 16:20

Title: Characterizing quantum states with Tomography

Speaker: Dr. Ming-Chien Hsu (Associate Research Fellow / Hon-Hai Research Institute)

Place: Rm. 104, Chin-Pao Yang Lecture Hall, Department of Physics/CCMS, NTU

Online Link:

<https://nationaltaiwanuniversity-zbh.my.webex.com/nationaltaiwanuniversity-zbh.my/j.php?MTID=m7601bdfa496ccaf8aac2838aab8c25f2>

Abstract:

Quantum computing is promising to provide computation advantage over classical computation in some aspects. It is essential to characterize the system to utilize the full power of quantum computers since we cannot see the quantum state directly and it can be fragile to noise. Depending on the performed measurement, we can reconstruct the state through quantum state tomography or classical shadow tomography. This can not only characterize the state but can also do error mitigation through appropriate post-processing in certain circumstances. In this talk, I will discuss tomography and classical shadow tomography in more detail regarding these aspects.

Biography:

Ming-Chien Hsu got his Ph.D. degree from Physics Department of National Taiwan University. After that he moved to National University of Singapore and National Sun Yat-Yen University with research focusing on condensed matter theory and topological materials. In 2020 he joined Hon-Hai Research Institute, where he developed research interests including quantum information, quantum tomography, state learning and applications of quantum computation in simulating condensed matter systems.

