

中央大學物理學系

Department of Physics, National Central University



Colloquium

Quantum simulation and quantum information control with ultracold atoms

Prof. Cheng Chin (金政 教授)

James Franck institute, Enrico Fermi institute and

Department of Physics University of Chicago

Date: 2023/10/03 (Tue)

Venue: S4-625

Time: 14:00-16:00

Abstract:

Laser cooling and trapping of atoms embarks an exploration into a new world where a complete quantum control is possible. New tools to precisely manipulate atoms have lead to advance simulation of complex quantum systems in nature and reveal exotic quantum phenomena. I will outline in this talk the basics of quantum control, as well as examples of quantum simulation relevant to nuclear, condensed matter and gravitational physics. Finally I will outline our new experiment to gain full control of a many-body Hamiltonian toward a scalable quantum information and quantum simulation platform.