Quantum Dynamics and Control beyond Simple Models and Approximations

From fundamental conceptual issues to the development of novel quantum devices, accurate calculation and control of quantum dynamical systems have great implications. However, beyond simple models and approximations, such tasks in general involve notoriously difficult theoretical problems. This workshop brings together experts working on these topics from both fields of condensed matter physics and chemical physics. The workshop will offer multifaceted information on current advances of quantum dynamics and control, and also will help understand core theoretical issues.

Friday 10 May 2019
Science Center (Room 4102)

9:00 - 9:30 AM Bagels and Coffee

9:30 - 10:40 AM From defect creation to order parameter steering: Dynamical phase transitions in condensed matter systems
Andrew Millis, Columbia University and the Flatiron Institute

11:00 - 12:10 PM The multilayer multi-configuration time dependent Hartree theory
Haobin Wang, University of Colorado Denver

12:10 - 1:30 PM Lunch

1:30 - 2:40 PM Accurate and efficient non-adiabatic quantum dynamics using master equations
Tom Markland, Stanford University

3:00 - 4:10 PM Manifestations of chaos in many-body quantum dynamics
Lea Santos, Yeshiva University

4:30 - 5:40 PM Controlling quantum dynamics phenomena with shaped fields acting as photonic reagents
Herschel A Rabitz, Princeton University

Sponsored by the Initiative for the Theoretical Sciences, and by the CUNY doctoral programs in Chemistry and Physics. Please send an email to sjiang@qc.cuny.edu for any question.

The Graduate Center is located at 365 Fifth Avenue, between 34th and 35th Streets, in Manhattan.