

Joint CQSE and CASTS Seminar

Weekly Seminar
Oct. 30, 2015 (Friday)

TIME Oct. 30, 2015, 14:30 ~ 15:30
TITLE Real-time dynamics of open quantum spin systems driven by
dissipative processes
SPEAKER Prof. Fu-Jian Jiang
Department of Physics, National Taiwan Normal University
PLACE Rm716, CCMS & New Physics Building, NTU

Abstract

We study the real-time dynamics of large open quantum spin systems in two-spatial dimensions using first principles quantum Monte Carlo simulations. In particular, the dynamics of the considered systems is entirely driven by dissipative processes. Several different dissipative processes as well as various initial ordered phases, such as Heisenberg- and XY-models, are investigated in our study. We find that the symmetry of the dissipative process determines the time scales which govern the approach towards a new equilibrium phase at late times. Specifically, a slow equilibration is observed for the processes which conserve any of the magnetization Fourier modes. The non-equilibrium transport of magnetization in large open quantum spin systems is studied with the same technology as well.

