

Talk Title: Transformation on the Reduced Dynamics in the Liouville Space

The evolution of a subsystem of interest under the influence of an environment can be obtained by averaging out the environmental degrees of freedom from the total system. The evolution of the reduced system is irreversible and is not unitary, in contrast to the evolution of the total system that is reversible and unitary. We investigate the requirements on the transformation operators in the reduced space and study some of their consequences when the subsystem is an oscillator.