Graduate Seminar in Mathematics

Speaker

Mr. Alireza Rafiyi

Thursday, February 26, 2015
1:00-2:00pm, HH-3017

Information Reduction in Quantum Mechanics

Abstract:
After reviewing the mathematical foundations, we address the problem of information reduction in quantum (statistical) mechanics. More precisely, we would like to describe a fixed subsystem of a large system of quantum particles in terms of its own degrees of freedom. We first consider a closed model of particles, and then investigate the open case, where the system is coupled (has interaction) with an environment. We derive the precise equations of dynamics in these cases. A major result in this area is that quantum entanglement is disabled when complexity (the number of particles) increases.