

## Day 2

Peter Love, Tufts University

Title: Semiclassicality and noncontextuality of Hamiltonians

Abstract:

In semiclassical treatments of continuous quantum systems phenomena are organized by order in  $\hbar$ . Effects at order zero in  $\hbar$  are taken as classical. In quantum computation, quantum systems amenable to efficient classical simulation are taken to be classical, in the sense that they lack the full power of quantum computation. In AQC, the salient question is: can noisy ground state evolution of transverse Ising Hamiltonians be regarded as classical or quantum in either sense? In this talk I will discuss several papers addressing semiclassical ideas and noncontextuality and their relevance for AQC. Specifically I will describe the Grassman algebra Wigner-Weyl-Moyal semiclassical theory of qubits and the notion of a noncontextual Hamiltonian.