

Day 3

Milad Marvian, University of New Mexico

Title: Universal diabatic quantum annealing

Abstract:

In this work, we show how to perform universal quantum computation using diabatic transitions in a quantum annealer. The construction uses homogeneous control on a chain of qubits and therefore it is suitable for implementation on existing superconducting quantum annealers, Rydberg atoms, and ion traps. A combination of energy penalty and dynamical decoupling methods are proposed to suppress errors in such systems.

This work was done in collaboration with Seth Lloyd.