May E. Kim (Physics & Astronomy)

"Quantum computing with trapped neutral atoms in a MOT"

Although the mathematical formulation behind quantum computing is well known and understood, attempts to implement it in laboratories have met with little success. Our novel approach uses an ensemble of Rubidium atoms as a qubit and uses the light field to transfer information from one qubit to another. The poster will outline three essential ideas to make this work; namely, Dicke's model of collective excitation, light shift imbalance induced blockade, and the Pellizari scheme.