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【401】Quantum Computation and Many-Body Physics with Trapped Ions

Thursday 30 August 2018 14:00 (30 minutes)

For the last three decades, quantum physics has promised a revolution in information processing - faster computers, better sensors and more secure communication. Today, those promises are becoming reality.
In this work, we experimentally explored various aspects of quantum information processing by encoding the (spin) information into individual ions confined in a Paul trap. Engineered laser fields were used to manipulate those qubits and to generate interactions among them. A large part of this work focuses on quantum simulation of interacting spins, e.g. investigating how entanglement propagates in such a system and exploring new kinds of phase transitions.

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