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【434】 Towards quantum control of polyatomic molecular ions

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Complete control over the quantum state of single molecules possesses significant challenges due to the complexity of their energy level structure and was demonstrated only recently for diatomic molecular ions. We report on the progress of a generalization of a quantum control scheme that employs quantum logic spectroscopy with a co-trapped atomic ion of calcium to polyatomic molecules. This will open the possibility of studying chemical reactions and ultracold collisions on a state-to-state level and conducting precision spectroscopy with polyatomic species.

Theoretical Work

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