

Ion-photon interface for quantum networks

Hiroki Takahashi

Okinawa Institute of Science and Technology

Abstract

The complementary benefits of trapped ions and photons as carriers of quantum information make it appealing to interface them via cavity QED. In particular a quantum register made of a string of ions and interfaced efficiently with optical photons provides an excellent platform for quantum repeaters and quantum networks. With this objective in mind, we have been working on the integration of micro optical cavities in ion traps. In the talk, we will present our achievements so far and future prospects.
