

# Quantum control of single-photon absorption in two-level atoms

## 一、Abstract

We use spread spectrum technology at the single photon level in order to improve the security of quantum communication and key distribution. In our experiment, we use high-speed electro-optic modulators to modulate the phase of single photon and biphoton wave packet, broadening the spectrum from 4.5 MHz to 10 GHz, to avoid photons being absorbed or detected by the atoms which is on the same energy level as the photon. It's like putting an invisible cloak over a photon, improving the confidentiality during the transmission process.

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