Whispering over Long-distance Using Light Quantum

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Communication security is becoming more and more important nowadays. The rapid development of quantum computing is imposing an urgent threat to classical cryptography such as RSA. Quantum communication is one of the solutions to face this challenge Different from classical cryptography, quantum communication relies on the properties of light quanta so as to detect eavesdropping, and thus prevent eavesdroppers from obtaining anything useful, just like whispering in classical communication. In 2000, we proposed the quantum secure direct communication (QSDC) scheme which transmits information directly using quantum states of light. Here I briefly review the basic principles of QSDC, its recent development, and free-space QSDC in particular.

Short Bio:

Gui-Lu Long obtains his Ph.D. from Tsinghua University. He is a professor of physics at Tsinghua university, and deputy director of Beijing Academy of Quantum Information Sciences. He proposed the theory of quantum secure direct communication and solved a series of technical difficulties to set up the first working prototype, together with his many other contributions. He is IOP fellow and APS fellow.