

《量子科技再突破！我国科学家创造量子直接通信最远纪录》

我国科学家近日设计出一种相位量子态与时间戳量子态混合编码的量子直接通信新系统，成功实现100公里的量子直接通信。



图片来源：新华社

Chinese scientists have realized the world's longest quantum secure direct communication (QSDC), measuring 100 km, according to the Beijing Academy of Quantum Information Sciences.

据北京量子信息科学研究院消息，我国科学家成功实现100公里的量子直接通信。这是至今为止世界上最长的量子直接通信距离。

The study, jointly conducted by a team of scientists from Tsinghua University and the Beijing Academy of Quantum Information Sciences, was

published in early April in the journal Light: Science & Applications.

这项研究由北京量子信息科学研究院和清华大学研究团队共同完成，相关成果已于4月初发表在《光：科学与应用》期刊。

"QSDC has attracted much attention, and has become one of the strongest candidates for secure communication in the future," said the paper's introduction.

阐述该研究成果的论文介绍，量子安全直接通信已引起了广泛关注，并已成为未来安全通信最有力的候选之一。

"QSDC securely and reliably transmits information through a quantum channel with both noise and eavesdropping. Compared to classical communication where reliable transmission of information over a noisy channel is concerned, QSDC has the additional capability to ensure its security using the properties of quantum information carriers," the authors wrote.

论文作者写道，量子直接通信以量子态作为载体来编码和传输信息。量子直接通信改变了传统保密通信的双信道结构，将噪声信道下的可靠通信发展为噪声和窃听信道下的可靠和安全通信。

这一突破(breakthrough)能够实现无中继条件下(without relays)部分城市与城市之间的点对点量子直接通信(point-to-point quantum direct communication between cities)。

Before this breakthrough, the longest QSDC distance published was 18 km.

此前公开发表的成果中，量子直接通信的最长距离为18公里。

China has been advancing the industrial application of quantum technology.

It has achieved a series of breakthroughs in quantum technology in recent years, including the world's first quantum satellite, a 2,000-km quantum communication line between Beijing and Shanghai, and the world's first optical quantum computing machine prototype.

我国一直在推进量子技术的工业应用。近年来，我国在量子技术方面取得了一系列突破，包括世界上首颗量子科学实验卫星、长达2000公里的量子通信线路“京沪干线”，以及世界上第一台光学量子计算机原型机。

【相关词汇】

量子 quantum

窃听 eavesdrop

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