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网络、通信、安全

基于Smolin states量子网络安全线路评估

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摘要 提出在由4个节点组成的量子网络中，基于Smolin state的量子网络安全线路评估传输协议。在量子网络中，有一个主节点、三个从节点，共享Smolin state态，随机的发送编码序列，利用测量结果的联合计算，来保证协议的安全性。理论分析证明，该协议对于三个窃听者、两个窃听者、一个窃听者都具有很高的安全性。如果存在窃听者存在，必然发现，从而保证了量子网络线路的安全性。

关键词 量子网络 安全线路评估 身份认证 Smolin state态

分类号

Quantum network secure circuit evaluation scheme based on Smolin states

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Abstract

In this paper，secure circuit evaluation scheme based on Smolin states can be implemented in realistic，highly quantum network with four quantum units.The protocol has one master unit and three slave units.The four units share Smolin states.The order of the qubits of the protocol which be sent to each party should be random.The master unit asks the three slave units to announce the result of their measurement，and checks together.The protocol proves to secure against three cheating strategy，two cheating strategy，one cheating strategy.It has been theoretically proved that an eavesdropper invariably introduce errors in communication network，it must find.The secure circuit evaluation scheme guarantee the security of the network.

Key words quantum communication network secure circuit evaluation identification Smolin states

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