

Documents

Altalib, A., Al-Ibrahim, Y., Almahfoudh, Z., Nagy, M., Nagy, N.

Security measures in a keyless quantum communication protocol

(2016) *Proceedings - 2015 5th International Conference on e-Learning, ECONF 2015*, art. no. 7478212, pp. 53-57.

Abstract

It has been shown that secure communication between two partners can be achieved with devices containing components with quantum properties. While such devices are in timid stages of practical availability, the quantum properties exhibited are well defined theoretically: quantum bits (qubits) in persistent quantum states, quantum transformations or gates applicable on qubits, and quantum communication channels between devices. The present paper measures and verifies by simulation a security level of a quantum communication protocol that does not use an encryption/decryption key. The algorithm is simpler than the two-step protocols that involve the distribution of a secret key first. Our simulations measure the security level of the protocol depending on several parameters: The number of encoding bases (two or three), the length of the signature string attached to the message, the percentage of qubits the eavesdropper inspects, etc. © 2015 IEEE.

2-s2.0-84978640736

Document Type: Conference Paper

Publication Stage: Final

Source: Scopus