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**Quantum secret sharing between multiparty and multiparty with four states.** (English)

Zbl 1138.94017

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In this paper a protocol of quantum secret sharing between multiparty and multiparty with four states is presented. The authors show that this protocol can nullify different attacks (the attack with a multi-photon signal, the fake-signal attack, the attack with single photons, and the attack with invisible photons). They also give the upper bounds of the average success probabilities for dishonest agent eavesdropping encryption using the fake-signal attack with any two-particle entangled states.

Reviewer: Zlatko Varbanov (Veliko Tarnovo)

**MSC:**

[94A62](#) Authentication, digital signatures and secret sharing  
[81P68](#) Quantum computation  
[94A60](#) Cryptography

Cited in **5** Documents

**Keywords:**

[security](#); [Trojan horse attack](#); [fake-signal attack](#); [EPR pairs](#)

**Full Text:** [DOI](#)

**References:**

- [1] Yan F L, Gao T. Quantum secret sharing between multiparty and multiparty without entanglement. *Phys Rev A*, 2005, 72(1): 012304
- [2] Li C M, Chang C C, Hwang T. Comment on "Quantum secret sharing between multiparty and multiparty without entanglement". *Phys Rev A*, 2006, 73(1): 016301
- [3] Deng F G, Yan F L, Li X H, et al. Addendum to "Quantum secret sharing between multiparty and multiparty without entanglement". ArXiv: quant-ph/0508171
- [4] Deng F G, Li X H, Zhou H Y, et al. Erratum: Improving the security of multiparty quantum secret sharing against Trojan horse attack. *Phys Rev A*, 2006, 73(4): 049901
- [5] Cai Q Y. Eavesdropping on the two-way quantum communication protocols with invisible photons. *Phys Lett A*, 2006, 351(1): 23-25 · [Zbl 1234.68031](#) · [doi:10.1016/j.physleta.2005.10.050](#)
- [6] Nielsen M A, Chuang I L. *Quantum Computation and Quantum Information*. Cambridge: Cambridge University Press, 2000 · [Zbl 1049.81015](#)
- [7] Zhang S, Feng Y, Sun X, et al. Upper bound for the success probability of unambiguous discrimination among quantum states. *Phys Rev A*, 2001, 64(6): 062103
- [8] Wang M Y, Yan F L. Conclusive quantum state classification. ArXiv: quant-ph/0605127

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