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RELATIVISTIC QUANTUM KEY DISTRIBUTION IN THE SINGLE-PHOTON REGIME

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The work reports a single-photon implementation of a relativistic quantum key distribution. A mathematical model of this implementation is proposed given that an *intercept-and-resend* attack is suggested. Relativistic restriction imposed on an eavesdropper in the key distribution of concern is mathematically presented. Based on the introduced model, the secret key rate of the relativistic implementation is evaluated. The secret key rate is parameterized in terms of the probability of intervening/intercepting.

MSC: 68P30, 81P68
Keywords: Quantum key distribution, single-photon regime, special relativity

Contents

1 Introduction **2**

2 Relativistic Quantum Key Distribution **3**

3 Mathematical Model **4**
3.1 Standard Model 5
3.2 Creation/Annihilation Operator Model 8

4 Security Analysis **11**
4.1 Relativistic Restriction 11
4.2 Secret Key Rate 13

5 Summary **14**

References **16**

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