Quantum dense key distribution
I. P. Degiovanni degio@ien.it I. Ruo Berchera S. Castelletto M. L. Rastello Istituto Elettrotecnico Nazionale G. Ferraris
F. A. Bovino fabio.bovino@elsag.it A. M. Colla G. Castagnoli ELSAG SpA

abstract

This paper proposes a new protocol for quantum dense key distribution. This protocol embeds the benefits of a quantum dense coding and a quantum key distribution and is able to generate shared secret keys four times more efficiently than BB84 one. We hereinafter prove the security of this scheme against individual eavesdropping attacks, and we present preliminary experimental results, showing its feasibility.