**PERFORMING CONTROLLED QUANTUM TELEPORTATION ON MIXED BISEPARABLE STATES**

Artur Barasiński[1,2]

*[1]RCPTM, Joint Laboratory of Optics of Palacký University and Institute of Physics of CAS, Faculty of Science, Palacký University, 17. Listopadu 12, 771 46 Olomouc, Czech Republic*
*[2]Institute of Physics, University of Zielona Góra, Z. Szafrana 4a, 65-516 Zielona Góra, Poland*

We analyze the controlled teleportation protocol via the partially entangled three-qubit mixed states. In particular, we investigate the relation between the faithfulness of the controlled teleportation scheme and entanglement. While our knowledge concerning controlled teleportation and entanglement in pure states is well established, for mixed states it is considerably much harder task and very little has been done in this field. Here, we present counterintuitive results that provide a new light on controlled teleportation protocol. It is shown that even mixed biseparable states are useful for this protocol along with genuine entangled three-qubit states. Effects of decoherence on these states are also studied, as they are of paramount importance for practical experimental realizations.