Quantum Teleportation of Optical Quantum Gates

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abstract We show that a universal set of gates for quantum computation with optics can be quantum
teleported through the use of EPR entangled states, homodyne detection, and linear optics and squeezing
operations conditioned on measurement outcomes. This scheme may be used for fault-tolerant quantum
computation in any optical scheme (qubit or continuous variable). The teleportation of nondeterministic
nonlinear gates employed in linear optics quantum computation is discussed.