

## Simple and Fast Scheme for Realizing Quantum Logic Gates in an Ion Trap

ZHENG Shi-Biao

Department of Electronic Science and Applied Physics, Fuzhou University, Fuzhou 350002, China  
(Received: 2003-6-5; Revised: 2003-8-16)

**Abstract:** We propose a simple and fast scheme to realize a controlled-NOT gate between two trapped ions using a resonant laser pulse. Our scheme allows the Rabi frequency of the laser field to be of the order of the vibrational frequency and thus the time required to complete the operation is greatly shortened, which is of importance in view of decoherence.

**PACS:** 03.67.Lx, 42.50.Dv, 03.65.Bz,

**Key words:** quantum logic gates, ion trap, Rabi frequency

[\[Full text: PDF\]](#)

Close