Abstract Submitted
for the TSF10 Meeting of
The American Physical Society

Controllable optical switch by a Bose-Einstein condensate in an optical cavity SHUAI YANG, Institute for Quantum Studies and Department of Physics, Texas A&M Universtity, College Station, Texas 77843, USA, MOHAMMAD AL-AMRI, The National Center for Mathematics and Physics, P.O. Box 6086, KACST, Riyadh 11442, Saudi Arabia, JORG EVERS, Max-Planck Institut for Kernphysik, Saupfercheckweg 1,D-69117 Heidelberg, Germany, M. SUHAIL ZUBAIRY, Institute for Quantum Studies and Department of Physics, Texas A&M Universtity, College Station, Texas 77843, USA — The optical bistability of the combination of the optical cavities and ultra cold atomic ensembles is investigated. We find that the transverse pumping field can be used to control the bistable behavior of the intra cavity photons induced by the input pumping along the cavity axis. This phenomenon can be used as a controllable optical switch.

Shuai Yang
Institute for Quantum Studies and Department of Physics,
Texas A&M Universtity, College Station, Texas 77843, USA

Date submitted: 27 Sep 2010 Electronic form version 1.4