Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Polarization dynamics within the polarization-switching hysteresis loop of VCSELs[1] JIN-ING TSAI, WANG-CHUANG KUO, CHUAN-PI HSU, Department of Physics, National Sun Yat-sen University, DA-LONG CHENG, Department of Computer and Communication, SHU-TE University, TSU-CHIANG YEN, Department of Physics, National Sun Yat-sen University — In the L-I curve of some VCSELs, distinct polarization switchings (PS) with a hysteresis loop are observed. In this research, PS at the center of the hysteresis loop was conducted by a manipulation of the operation conditions, enabling the polarization dynamics within the loop to be investigated. Experimental results revealed that the temporal behaviors of PS were different at the two ends of the PS hysteresis loop. A set of rate equations based on a linear gain model was employed to understand the polarization dynamics involved. Simulations indicated that the polarization dynamics could be attributed to the variation of the polarization-resolved gains within the PS hysteresis loop. More investigated results will be presented in the report.

[1]Supported by NSC of R.O.C. under grand No. NSC 96-2112-M-110-008-MY2

Jin-Ing Tsai
Department of Physics, National Sun Yat-sen University

Date submitted: 20 Nov 2008 Electronic form version 1.4