Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

**Carrier and Spin Dynamics in Narrow Gap Multi Quantum Well Structures**[1] MITHUN BHOWMICK, KELLY MCCUTCHEON, GITI A. KHODAPARAST, Virginia Tech, TETSUYA D. MISHIMA, MICHAEL B. SANTOS, University of Oklahoma, DIPTA SAHA,, GARY D. SANDERS, CHRISTOPHER J. STANTON, University of Florida — We studied carrier/spin dynamics in several $InSb/Al_xIn_{1-x}Sb$ multiple-quantum well structures using several time resolved differential transmission schemes in the mid-infrared. Our results demonstrate the unique and complex dynamics in InSb heterostructures that can be important for electronic and optoelectronic devices. We present experimental observations and compare them with theoretical calculations. Calculations are based on the 8-band Pidgeon-Brown model generalized to include confinement potential as well as pseudomorphic strain. Optical properties are calculated within the golden rule approximation and compared with one and two color, time-resolved pump-probe differential transmission.

[1]Supported by: NSF-Career Award DMR-0846834, NSF- DMR-0706313, and NSF DMR-1105437

Giti Khodaparast
Virginia Tech

Date submitted: 10 Nov 2011 Electronic form version 1.4