

Abstract Submitted  
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**Helicity-dependent photocurrent in a (110) GaAs quantum well stack** D.C. SCHMADEL, M.-H. KIM, A.B. SUSHKOV, G.S. JENKINS, Department of Physics, University of Maryland (Physics-UMD), J.D. KORALEK, Lawrence Berkeley National Lab (LBNL), J.E. MOORE, J. ORENSTEIN, University of California Berkeley, and LBNL, YUZO OHNO, HIDEO OHNO, Research Institute of Electrical Communication, Tohoku University, Japan, H.D. DREW, Physics-UMD — There have been many reports on the circular photogalvanic effect (CPGE) in GaAs quantum wells. A recent theoretical study suggests that the CPGE can be governed by a quantum confinement-induced Berry phase effect that depends only on the quantum-well width and crystal orientation (J.E. Moore, Phys. Rev. Lett. 2010). We have measured the photocurrent in a (110)-oriented GaAs quantum well stack under illumination of circularly polarized THz radiation. We will report measurements of the helicity-driven photocurrent as a function of frequency, polarization, angle of incident, and temperature, and compare with theoretical predictions of the Berry phase contribution.

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