

Abstract Submitted  
for the MAR06 Meeting of  
The American Physical Society

**Studies of Coherent Acoustic Phonons in CdMnTe Single Crystals**  
D. WANG, S. WU, R. SOBOLEWSKI, University of Rochester, Rochester, NY 14627, A. MYCIELSKI, Polish Academy of Sciences, PL-02668 Warszawa, Poland — We have demonstrated generation and detection of coherent acoustic phonons (CAPs) in  $\text{Cd}_{0.91}\text{Mn}_{0.09}\text{Te}$  (CdMnTe) single crystals using a femtosecond pump-probe spectroscopy technique. The Thomsen model based on propagation of a strain pulse in a crystalline lattice accounted very well the observed dependences of the frequency and the dephasing time of our CAP oscillations on the optical probe beam wave-vector. The CAP oscillation frequency was found to be dispersionless with the speed of sound equal to 3579 m/s. The comparison studies, performed using the pump beam with the photon energy well above the CdMnTe energy gap and the sub-gap probe beam demonstrated that in our crystals the measured dephasing time of CAP oscillations was limited by the absorption depth of the probe light rather than the intrinsic decay time of the coherent phonons. The latter value was estimated to be at least in the nanosecond range. Optically-induced electronic stress was determined to be the main generation mechanism of CAPs in CdMnTe.

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Date submitted: 03 Dec 2005

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