

Abstract Submitted
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Cyclotron Resonance in InMnAs and InMnSb Ferromagnetic Films¹ GITI KHODAPARAST, Department of Physics, Virginia Tech, Blacksburg, VA, USA, Y.H. MATSUDA, R. SHEN, S. TAKEYAMA, Institute for Solid State Physics, University of Tokyo, Kashiwa, Japan, X. LIU, J. FURDYNA, Department of Physics, University of Notre Dame, Notre Dame, IN, USA, B.W. WESSELS, Materials Research Center, Northwestern University, Evanston, IL, USA — Ferromagnetic semiconductors are important materials for development of spintronic devices. While effort in this area was made primarily on GaMnAs, other ferromagnetic III-Mn-V alloys have also been developed, including the narrow gap ferromagnetic alloys such as InMnAs and InMnSb. Investigation of the electronic structure of III-Mn-V alloys by techniques such as the cyclotron resonance (CR) can shed important light on the origin of ferromagnetism and the p-d exchange interaction in III-Mn-V systems. In this work we report on CR experiments carried out on the ferromagnetic InMnAs and InMnSb films, on which clear resonance signals have been successfully observed in high magnetic fields generated by a single turn coil technique. The CR in ferromagnetic InMnSb was observed for the first time and we compare our observations with the Landau levels calculations on the basis of an 8-band $k:p$ model.

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