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Study of the angular phase shift in the polarization angle dependence of the microwave induced magnetoresistance oscillations HAN-CHUN LIU, RASANGA SAMARAWEEERA, RAMESH MANI, Georgia State University, CHRISTIAN REICHL, WERNER WEGSCHEIDER, ETH — We examine the microwave frequency(f)-variation of the angular-phase-shift, θ_0 , observed in the polarization-angle-dependence of the microwave-induced magnetoresistance oscillations in the high mobility GaAs/AlGaAs two-dimensional electron system[1][2]. By fitting the diagonal resistance R_{xx} vs. θ_0 plots to an empirical cosine square law, we extract the θ_0 and trace its quasi-continuous variation with f . The results suggest that the overall average of θ_0 extracted from Hall bar device sections with length-to-width ratio $L/W = 1$ and $L/W = 2$ is the same. We compare the observations with expectations arising from the “pondermotive force” theory for the microwave radiation-induced transport phenomena. [1] R. G. Mani et al., Phys. Rev. B 84, 085308 (2011). [2] A. N. Ramanayaka et al., Phys. Rev. B 85, 205315 (2012).

Han-Chun Liu
Georgia State University

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