Abstract Submitted
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Magnetic field- and frequency-dependence- of the phase-shift in the linearly-polarized microwave radiation-induced magnetoresistance oscillations in the GaAs/AlGaAs system HAN-CHUN LIU, TIANYU YE, Department of Physics & Astronomy, Georgia State University, WERNER WEGSCHEIDER, ETH-Zurich, Zurich, Switzerland, RAMESH MANI, Department of Physics & Astronomy, Georgia State University — Nonequilibrium transport studies of the radiation-induced magnetoresistance oscillations (RIMOs) have revealed striking photo-excited zero-resistance states in the GaAs/AlGaAs two-dimensional electron system [1]. Further observations show that RIMOs are linear-polarization-angle-sensitive and follow a sinusoidal fitting formula, $R_{xx}(\theta) = A \pm C\cos^2(\theta\text{-}\theta_0)$ where R_{xx} is the diagonal resistance, θ is the polarization angle, and θ_0 is the extracted phase shift. At the present, θ_0 is known to be magnetic- and frequency dependent [2]. Here, we perform magnetic mappings at small θ intervals, at a number of radiation frequencies, to study the variation of the phase shift with the magnetic field and frequency. The relationship between phase shift and magnetic fields/frequency will be critically examined and reported in this presentation.

[1] R. G. Mani *et al.*, Phys. Rev. B 84, 085308 (2011).
[2] A. N. Ramanayaka *et al.*, Phys. Rev. B 85, 205315 (2012).

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