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Microwave reflection study of GaAs/AlGaAs devices in the regime of the radiation-induced magnetoresistance oscillations[1] TIANYU YE, A.N. RAMANAYAKA, R.G. MANI, Georgia State University, W. WEGSCHEIDER, ETH-Zurich, ETH-ZURICH COLLABORATION — The microwave-induced magnetoresistance oscillations are revealed in the GaAs/AlGaAs two dimensional electron system (2DES) under microwave and terahertz photo-excitation at liquid helium temperatures. Such oscillations are understood in terms of the displacement and inelastic models for photo-excited transport in this system. In order to identify the relative physical contributions, we have concurrently examined magnetotransport and microwave reflection from the 2DES. For the reflection measurements, a sensitive microwave detector was assimilated into the standard experimental setup. Here, we report on the observed magnetic field induced changes in the microwave reflection, and correlate the observations with concurrent transport response of the photo-excited 2DES.

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