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Photovoltage detection of edge magnetoplasmon oscillations and giant magnetoplasmon resonances in a two-dimensional hole system JIAN MI, JIANLI WANG, International Center for Quantum Materials, Peking University, LOREN N. PFEIFFER, KEN W. WEST, KIRK W. BALDWIN, Department of Electrical Engineering, Princeton University, CHI ZHANG, International Center for Quantum Materials, Peking University — In our high mobility p-type Al-GaAs/GaAs two-dimensional hole samples, we originally observe the B -periodic oscillation induced by microwave (MW) in photovoltage (PV) measurements. In the frequency range of our measurements (5 – 40 GHz), the period is inversely proportional to the microwave frequency (f). The distinct oscillations come from the edge magnetoplasmon (EMP) in the high quality heavy hole system. Simultaneously, we observe the giant plasmon resonance signals in our measurements on the shallow two-dimensional hole system (2DHS).

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