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Photoresistance of two-dimensional electron gas at sub-Terahertz frequencies P.D. MARTIN, M.A. ZUDOV, School of Physics and Astronomy, University of Minnesota, Minneapolis, Minnesota 55455, USA, J.D. WATSON, M.J. MANFRA, Department of Physics, Purdue University, West Lafayette, Indiana 47907, USA, L.N. PFEIFFER, K.W. WEST, Department of Electrical Engineering, Princeton University, Princeton, New Jersey 08544, USA — Extending experiments on photoresistance of ultra-high mobility 2DES to higher radiation frequencies allows to enter the regime of strong Shubnikov-de Haas oscillations (SdHO), which remains largely unexplored. This talk reports on low-temperature photoresistance measurements using frequencies from 0.2 to 0.4 THz. At higher radiation intensity, we observe a series of very strong and narrow peaks which occur near the cyclotron resonance. At lower intensities, strong peaks disappear and the data reveal a suppression of SdHO near the cyclotron resonance, and to a lesser extent, near its harmonics. These findings will be compared to existing theoretical predictions.

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