

Abstract Submitted
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Effect of Multiphoton Processes on Differential Magneto-resistance of Two-Dimensional Electron Systems¹ MAXIM VAVILOV, University of Wisconsin, MAXIM KHODAS, Brookhaven National Laboratory, HUNG-SHENG CHIANG, ANTHONY HATKE, MICHAEL ZUDOV, University of Minnesota, LOREN PFEIFFER, KEN WEST, Princeton University — We apply the quantum kinetic equation to calculate the non-linear current through a two-dimensional electron systems subject to intense microwave radiation and placed in a perpendicular magnetic field. We find that the magneto-resistance exhibits an oscillatory behavior as a function of the microwave power near the cyclotron resonance. We demonstrate that these oscillations can be explained in terms of multiphoton scattering processes. Our theoretical results capture all important characteristics of recent experimental studies of the non-linear magnetotransport in high-mobility systems.

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