

Abstract Submitted
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Fine structure of high-power microwave-induced resistance oscillations¹ QIANHUI SHI, MICHAEL ZUDOV, University of Minnesota, IVAN DMITRIEV, Max-Planck-Institute for Solid State Research, Ioffe Physical Technical Institute, KIRK BALDWIN, LOREN PFEIFFER, KEN WEST, Princeton University, JURGEN SMET, Max-Planck-Institute for Solid State Research — We report on a pronounced fine structure of microwave-induced resistance oscillations (MIRO) in an ultra-clean two-dimensional electron gas. This fine structure is manifested by additional sharp extrema residing beside the primary ones and, according to theoretical considerations, originates from multiphoton-assisted scattering off short-range impurities. Unique properties of the fine structure allow us to access all experimental parameters, including microwave power, and to separate different contributions to photoresistance. Finally, we demonstrate that the fine structure can be used to quantitatively assess the correlation properties of the disorder potential.

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