Abstract Submitted
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Resistance oscillations in two-dimensional electron systems due to resonant acoustic phonon scattering[1] MICHAEL ZUDOV, ANTHONY HATKE, WENHAO ZHANG, University of Minnesota, LOREN PFEIFFER, KEN WEST, Bell Labs, Alcatel-Lucent — A few years ago a new class of resistance oscillations was discovered in two-dimensional electron systems subject to weak magnetic fields and elevated temperatures [1]. It was proposed that oscillations originate from resonant interaction with acoustic phonons made possible by virtue of a special selection rule which favors electron backscattering. In contrast to other types of magneto-resistance oscillations, such as those appearing under application of microwave or dc electric fields, phonon-induced resistance oscillations (PIRO) have not received much attention and remain poorly understood. Of particular interest are the period and the phase of PIRO, relative contribution and nature of different phonon modes, and the effect of temperature and sample parameters. This talk will briefly review prior and new experimental results and discuss open issues.
[1] M.A. Zudov, I.V. Ponomarev, A.L. Efros, R.R. Du, J.A. Simmons, and J.L. Reno, Phys. Rev. Lett. **86**, 3614 (2001)

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Michael Zudov
University of Minnesota

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