## Abstract Submitted for the MAR06 Meeting of The American Physical Society

Effect of dc and ac excitations on the longitudinal resistance of a two-dimensional electron gas in highly doped GaAs quantum wells¹ JINGQIAO ZHANG, ALEXEY BYKOV, SERGEY VITKALOV, The City College of New York, A. K. KALAGIN, A. K. BAKAROV, Institute of Semiconductor Physics, 630090 Novosibirsk, Russia — Linear AC (888 Hz) resistance of highly mobile two dimensional electrons in GaAs heavily doped quantum wells is studied at different magnitude of dc and ac (10 KHz to 20 GHz) excitations. In the DC excitation regime the differential resistance oscillates with the dc current and external magnetic field similar to that observed earlier in AlGaAs/GaAs heterostructures. At external ac excitations the resistance is also found to be oscillating with the magnetic field. However the form of the oscillations is considerably different from the dc case. We show that at frequency below 100 KHz the difference is result of a specific average of the dc differential resistance during the period of the external ac excitations.

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