**Nonlinear growth with the microwave intensity in the microwave radiation-induced magnetoresistance oscillations**[1] R. G. MANI, Georgia State University, C. GERL, University of Regensburg, S. SCHMULT, University of Regensburg, MPI-Stuttgart, W. WEGSCHEIDER, University of Regensburg, ETH-Zurich, V. UMANSKY, Weizmann Institute — We compare the characteristics of inverse-magnetic-field- periodic, radiation-induced magnetoresistance oscillations in GaAs/AlGaAs heterostructures prepared by W. Wegscheider et al., and V. Umansky, by fitting the observed lineshape vs. the radiation power, $P$, in the two MBE materials. We find that the radiation-induced oscillatory $\Delta R_{xx}$, in both materials, can be described by $\Delta R_{xx} = -A exp(-\lambda/B) sin(2\pi F/B)$, where $A$ is the amplitude, $\lambda$ is the damping parameter, and $F$ is the oscillation frequency. Both $\lambda$ and $F$ turn out to be insensitive to $P$. On the other hand, $A$ grows nonlinearly with $P$.

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