

Erratum: Oscillatory photoresistance on the high-field side of the cyclotron resonance **[Phys. Rev. B *113*, L201404 (2026)]**

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Equation (1) in the original article is incorrect. It was adopted from Ref. [1], where the error did not affect the final result. The correct version of Eq. (1) from Ref. [1], which we obtained from Ref. [2], should read

$$\frac{\delta\rho_\omega}{\rho_D} = \frac{2\tau}{\tau_{\text{sh}}} \lambda^2 [f(\xi) + \pi\epsilon \cot \pi\epsilon \xi f'(\xi)], \quad (1)$$

which, in the regime of interest, $\pi\epsilon \ll 1$, reduces to

$$\frac{\delta\rho_\omega}{\rho_D} \approx \frac{2\tau}{\tau_{\text{sh}}} \lambda^2 [f(\xi) + \xi f'(\xi)]. \quad (1a)$$

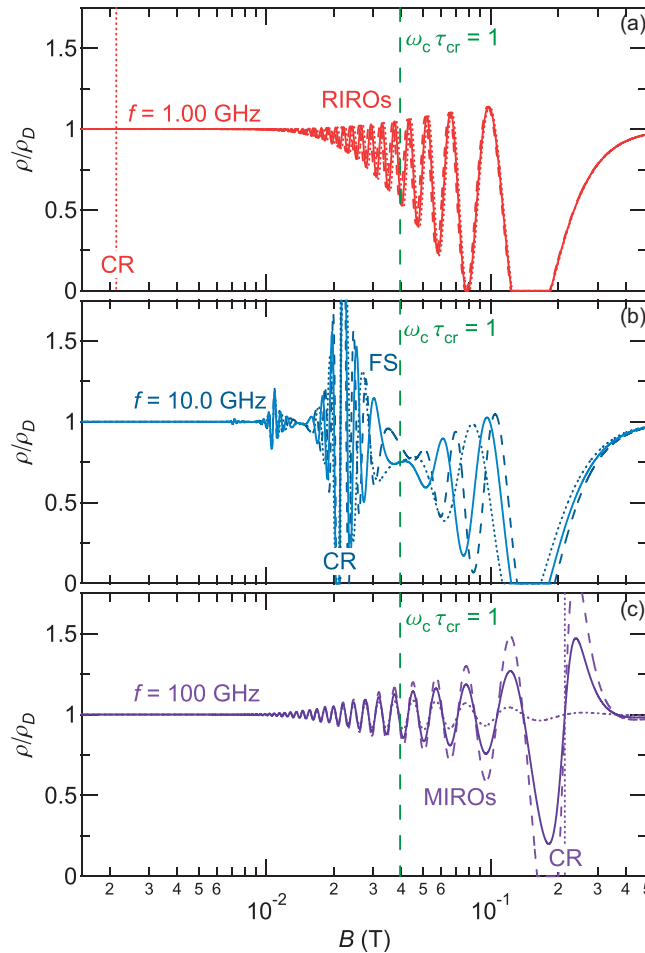


FIG. 2. Photoresistance ρ/ρ_D as a function of magnetic field B calculated using Eq. (1) for (a) $f = 1.00$ GHz, (b) 10.0 GHz, and (c) 100 GHz, as marked [3]. Solid lines correspond to linear polarization and dashed (dotted) are the results for circular active (inactive) polarizations. Dotted vertical lines mark the position of the cyclotron resonance (CR) $\omega_c = \omega$. Dashed vertical line is drawn at $B = m^*/e\tau_{\text{cr}}$.

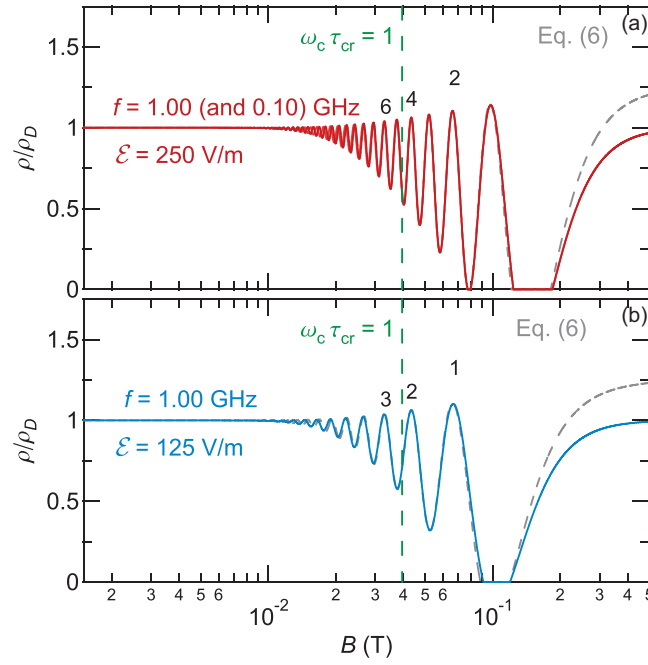


FIG. 4. (a) Photoresistivity ρ/ρ_D as a function of magnetic field B calculated using Eq. (1) (solid lines) and Eqs. (6), (8), and (9) (dashed lines) for $f = 1.00$ GHz (and for $f = 0.10$ GHz) [3]. The microwave field is $\mathcal{E} = 250$ V/m. As expected, the curves corresponding to different f are nearly indistinguishable. (b) Photoresistivity ρ/ρ_D as a function of magnetic field B calculated using Eq. (1) (solid line) and Eqs. (6), (8), and (9) (dashed line) for $f = 1.00$ GHz and $\mathcal{E} = 125$ V/m [3]. The oscillation frequency is reduced by a factor of 2, compared to RIROs shown in panel (a), but the amplitude remains the same. Approximations given by Eqs. (6), (8), and (9) break down at high B , when ξ is no longer much larger than unity (see Fig. 3). Dashed vertical line is drawn at $B = m^*/e\tau_{cr}$.

As a result, Eqs. (6), (8), and (9) should all read

$$\frac{\delta\rho_\omega}{\rho_D} \approx \frac{8\tau}{\pi\tau_{sh}}\lambda^2 \cos 2\pi\kappa, \quad (6,8,9)$$

and the right-hand sides of Eqs. (4) and (5) should be multiplied by a factor of 2:

$$\frac{\delta\rho_\omega}{\rho_D} \approx -\frac{3\tau}{\tau_{sh}}2\pi\epsilon\mathcal{P}(\epsilon)\lambda^2 \sin 2\pi\epsilon, \quad (4)$$

$$\frac{\delta\rho_\omega}{\rho_D} \approx \frac{8\tau}{\tau_{sh}}\lambda^2\epsilon \cot(\pi\epsilon) \cos[4\sqrt{\mathcal{P}(\epsilon)} \sin \pi\epsilon]. \quad (5)$$

In the Supplemental Material, Eqs. (1) and (2) need to be modified accordingly. At $\pi\epsilon \ll 1$, the inelastic contribution is described by

$$\frac{\delta\rho}{\rho_D} \approx 4\tau\lambda^2 \frac{\xi\bar{\gamma}(\xi)\partial_\xi\gamma(\xi)}{\tau_0^{-1} + \tau_{in}^{-1} - \gamma(\xi)}, \quad (1)$$

and the displacement contribution due to smooth disorder is

$$\frac{\delta\rho}{\rho_D} = 2\lambda^2\tau(\partial_\xi[\xi\bar{\gamma}_{sm}(\xi)] - \chi/\tau_{sm}). \quad (2)$$

While none of these corrections affect the main message of the original paper, we present updated versions of the figures (Fig. 2, Fig. 4, and Fig. S1) that were affected.

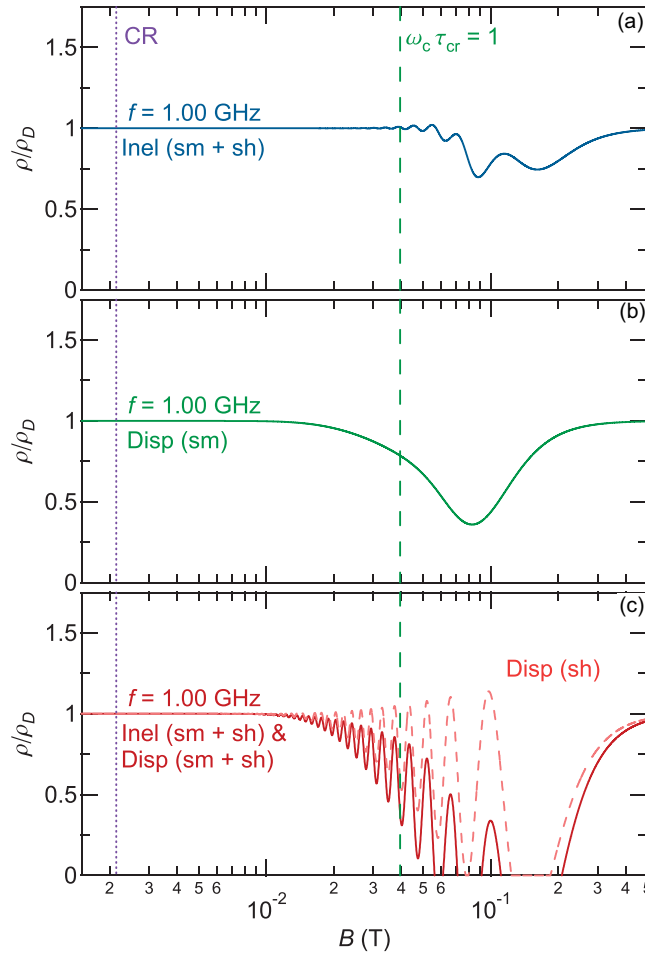


FIG. S1. Resistivity $\rho/\rho_D = 1 + \delta\rho/\rho_D$ as a function of magnetic field B calculated for $f = 1.00$ GHz, $\mathcal{E} = 250$ V/m considering (a) mixed-disorder inelastic contribution, Eq. (1), (b) smooth-disorder displacement contribution, Eq. (2), and (c) mixed-disorder displacement and inelastic contributions. For comparison, sharp-disorder displacement contribution, discussed in the main text, is shown by dashed line. Vertical dotted (dashed) line is drawn at $\omega_c = \omega$ ($\omega_c = \tau_{cr}^{-1}$).

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- [1] A. T. Hatke, M. Khodas, M. A. Zudov, L. N. Pfeiffer, and K. W. West, Multiphoton microwave photoresistance in a high-mobility two-dimensional electron gas, *Phys. Rev. B* **84**, 241302(R) (2011).
- [2] M. Khodas and M. G. Vavilov, Effect of microwave radiation on the nonlinear resistivity of a two-dimensional electron gas at large filling factors, *Phys. Rev. B* **78**, 245319 (2008).
- [3] Here, we subtracted the nonoscillatory quantum correction, $-2\lambda^2(\tau/\tau_{sh})$ [1], to show that the oscillatory photoresistivity vanishes at high B .