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Erratum

Theory of the Photon-Drag Effect in *p*-Type Germanium with a Parabolic and Anisotropic Band-Structure Approximation

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Unfortunately, the integration over the solid angle in (2) was not carried out correctly. Of course, (2) should read

$$\mathbf{j}(s) = \int_{\varphi=0}^{2\pi} \int_{\vartheta=0}^{\pi} e\Delta p_h(s)\mathbf{v}_h(\vartheta,\varphi)\sin\vartheta d\vartheta d\varphi + \int_{\varphi=0}^{2\pi} \int_{\vartheta=0}^{\pi} e\Delta p_l(s)\mathbf{v}_l(\vartheta,\varphi)\sin\vartheta\, d\vartheta\, d\varphi .$$

The integrals in (4), (7), (9), and (10) must be corrected correspondingly, and (6) must be replaced by

$$\alpha_k = \alpha_h/4\pi .$$

This new expression for α_k implies that π^2 in the denominator of (7), (11), (25), (26), (28), (29), and (31) must be replaced by π. Our numerical calculations were repeated with the given modifications yielding D_L to be independent of the crystallographic direction, and $D_{T[111]}$ vanished. These results are due to our introduction of a transition probability independent of polarisation which means a reduction of the fourth-rank photon-drag tensor to a tensor of the second rank. It can be shown that properties described by second-rank tensors are completely isotropic in crystals with cubic symmetry [2].

The new numerical result (replacing the one shown in Fig. 2) is $D_L = -0.55 + 0.55\tau_h/\tau_l$. For $p > 10^{15}\,\mathrm{cm}^{-3}$, Hattori et al. [3] measured the tensor components $S = 1.3 \times 10^{-7}$ cm/A and $(P+2S)/3 = 1.7 \times 10^{-7}$ cm/A corresponding to $D_{L[100]} = 1.1$ and $D_{L[111]} = 1.4$, respectively. Measurement by N. Wenzel at our institute resulted in $S \approx 3.3 \times 10^{-7}$ cm/A and $(P+2S)/3 \approx 4.2 \times 10^{-7}$ cm/A for $p = 4 \times 10^{14} \ldots 2 \times 10^{16}\,\mathrm{cm}^{-3}$. This means that $D_{L[100]} \approx 2.6$ and $D_{L[111]} \approx 3.3$. Acoustical and optical scattering rates [4] at the energies of the final and initial states of the transition lead to $\tau_l \approx 0.1$ ps and $\tau_h \approx 0.6$ ps. From the measurements of Hattori et al. $\tau_h \approx 0.4$ ps can be calculated, and our own experiments resulted in $\tau_h = 0.7 \ldots 0.9$ ps, if $\tau_l = 0.1$ ps is assumed.

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