restriction on Δn would have been $\Delta n \ll 10^5$ cm^{-3}.

For the ITL model with the value of p_0 and the recombination parameters as given, it turns out that, as long as (11) and (12) are satisfied, the effect of level 2 on the lifetimes is negligible anyway.[10] Now, conditions (11) and (12) also happen to be the linearization conditions when only level 1 is operative. We conclude, therefore, that whether we use the IDL or the ITL model, the restriction on Δn is the same, and is given by (12).

The above conclusions apply to more extrinsic p-type material as well, since the approximation of both the IDL and ITL models to a one-level model improves as the Fermi level moves closer to the valence band. In this connection, it is interesting to observe that according to (12), the restriction on Δn should be less severe the larger the value of p_0. This is contrary to what we would expect if the restriction on Δn is governed instead by $\Delta n \ll n_0$. Thus, if $p_0 = 2 \times 10^{15}$ and $n_0 = 10^4$ cm^{-3}, condition (12) would become $\Delta n \ll 4 \times 10^{10}$ cm^{-3}, whereas using $\Delta n \ll n_0$ would require $\Delta n \ll 10^4$ cm^{-3}, an impracticably low value.

As stated earlier, the value of c_{p1}/c_{n1} that we use in evaluating condition (12) is obtained from previous measurements done at unspecified values of Δn. However, if we take the values of τ_n and τ_p obtained by Beattie and Cunningham[9] at the smallest photon flux density they used (corresponding to a value of Δn less than 10^9 cm^{-3}) and analyze them in terms of level 1 with a typical value of N_1 ($\simeq 10^{14}$ cm^{-3}), we arrive at a ratio of $c_{p1}/c_{n1} \simeq 2 \times 10^{-5}$, in excellent agreement with our value.

In the light of the foregoing discussion, it would appear that previous low-temperature lifetime data, which are self-consistent over a wide range of carrier concentrations, are unlikely to be seriously in error, despite the fact that they were analyzed on the basis of the small-signal PEM and PC theory.

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[10]For the IDL model with N_1 comparable to N_2, the same conditions would also make the effect of level 2 negligible.

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ERRATA

Quantum Dielectric Theory of Electronegativity in Covalent Systems. II. Ionization Potentials and Interband Transition Energies, J. A. Van Vechten [Phys. Rev. 187, 1007 (1969)]. There are six errors among the values of the spectroscopic or Phillips fraction of ionic character,

$$f_i \quad , \quad \text{Phillips}$$

quoted in Table IV. The values of the energy gaps E_h, C, and E_g and of the other parameters are correct. These errors do not affect the results of this paper, but should be noted when applying the ionicity concept to the compounds involved. A table of the quoted and corrected values follows.

Crystal	f_i (quoted) Phillips	f_i (corrected) Phillips
BeSe	0.299	0.261
BeS	0.312	0.286
GaP	0.374	0.327
ZnTe	0.546	0.609
CdTe	0.675	0.717
ZnSe	0.676	0.630