$$+\int_{\Theta^*/T}^{\Theta_D/T} \frac{x^4 e^x (e^x-1)^{-2} dx}{\tau_B^{-1}+\tau_{pt}^{-1}+\tau_{pp}^{-1}} \Bigg] .$$

In view of the fact that Θ^* changes with doping and may be different for different doping materials, it has been treated as an adjustable parameter for the best fit between theory and experiment. The values of τ_B^{-1}, τ_{pt}^{-1}, τ_{pp}^{-1}, and τ_{ep}^{-1} are the same as those used by Singh and Verma.[3] The results of the calculations are shown in Figs. 1–4. Table I gives the values of Θ^* and Table II the percentage contribution of peripheral phonons towards the phonon conductivity of Sb- and As-doped Ge in the temperature range 2–20 °K. The adjusted values of Θ^* are also compared with the values calculated from

$$\Theta_m^* = (\hbar v_s/k_B)(2k_e) = (2\hbar v_s/k_B)(3\pi^2 \tfrac{1}{3} n)^{1/3}$$

$$= (2\hbar v_s/k_B)(\pi^2 n)^{1/3} ,$$

where n is the electron concentration. This relation holds for metals with isotropic- and quadratic-energy distribution. One can express $\Theta^* = F\Theta_m^*$, where F is a constant which varies from 3 to 5.

At very low temperatures, say up to 5 °K, all the thermal conductivity is due to those phonons which interact with electrons; i.e., electron-phonon scattering is mainly responsible for the low-temperature phonon conductivity in doped semiconductors. As the temperature increases, the contribution of peripheral phonons increases with it.

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ERRATA

Lattice Dynamics of Magnesium for a First-Principles Nonlocal Pseudopotential Approach, Walter F. King, III and P. H. Cutler [Phys. Rev. B 3, 2485 (1971)]. The captions of Figs. 3 and 4 should be interchanged.

Improved Variational Principles for Transport Coefficients, David Benin [Phys. Rev. B 1, 2777 (1970)]. The numerical calculations described in Secs. V and VI were performed incorrectly. In fact, the lower bound $K_1^<$ lies only about 20% higher than the bound $K_0^<$ at low temperatures, rather than 90% as claimed.

Shubnikov-de Haas Measurements in Bismuth, Rodney D. Brown, III [Phys. Rev. B 2 928 (1970)]. In the discussion of the Dingle temperature (p. 936) the estimates of the cyclotron radii correspond to magnetic fields ten times larger than those indicated. Since the correct radii are larger than the screening length over most of the range of field, the argument leading to Eq. (9) is invalidated, as is the explanation of the Dingle temperature. In addition, in going from Eq. (9) to Eq. (10) the thermal broadening of the level as well as the collision broadening should have been taken into account in estimating E_z. I am grateful to Dr. M. Springford for pointing out the error in the radii estimates.