Phys 230 Fall 1999

Homework 2

Read lecture notes #4 (electron-phonon scattering).

Redo all the calculations for $d = 2$, i.e., 2D electrons + 2D phonons.

In particular, consider the low-temperature regime and derive formulas for $D_p$ (Fokker-Planck diffusion coefficient in the momentum space) and the electrical conductivity $\sigma$ (i.e., the 2D analog of the Bloch law).