Effective Mass of Vector Polarons
CHARLES FOELL, DENNIS CLOUGHERTY, University of Vermont — We consider the vector polarons of a one-dimensional model of an electron in a doubly (or nearly) degenerate band that couples to two elastic distortions, as described previously by Clougherty and Foell [1]. A variational approach is used to analytically calculate effective masses of the three types of vector polarons. The effective mass to band mass ratios are compared to the numerical results of a related model by Hock, Nickisch and Thomas [2] in the region of parameter space where there is overlap.