The properties of the iterative solution of the inverse Dyson equation for the calculation of correlation corrected band structures of polymers. Foerner, Wolfgang

Abstract

We discuss the convergence properties of the iterative soln. of the inverse Dyson equation for quasiparticle corrections to HF energy eigenvalues. This iteration converges only if a principal soln. exists. In this case it converges exactly to that soln. A soln. to which the iteration converges must have a pole strength larger than 1/2, and this soln. must be the one with the largest pole strength, because the pole strength has to have values of 0-1, and the sum over all the pole strengths has to equal 1. As an example a tight binding model is discussed.