

Abstract Submitted
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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.

[1] D. P. Clougherty and C. A. Foell, Phys. Rev. B 70, 052301 (2004).

[2] K. -H. Hock, H. Nickisch and H. Thomas, Helv. Phys. Acta, 56, 237 (1983).

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