1133-49-278 **Holly Carley*** (hkcarley@gmail.com), 300 Jay Street, Namm Hall 711 (N-711), Brooklyn, New York, NY 11201. *A path integral formulation for the ground state energy.*

Here we consider a toy model of the much studied polaron model. The polaron is an distortion that occurs when a charged particle moves in a crystal. The toy model, describes a particle interacting with a harmonic oscillator, with a coupling parameter. When the parameter is small, use of perturbation theory will give an expression for the ground state energy. When the parameter is large, a different method must be used. We will develop a path integral formulation for the ground state energy and discuss developments concerning a hypothetical asymptotic expression for the ground state energy. (Received July 29, 2017)