C. A. Onate · K. J. Oyewumi · B. J. Falaye

Approximate Solutions of the Schrödinger Equation with the Hyperbolical Potential: Supersymmetric Approach

Abstract: The bound state solution of the Schrödinger equation with the hyperbolical potential is obtained by using supersymmetric approach. By applying proper approximation scheme to deal with the centrifugal barrier, we obtain the energy eigenvalues and the corresponding wave functions are obtained in terms of generalized hypergeometric functions. Comparison of our computed numerical results with the ones obtained by findings of other methods reveals that supersymmetric approach is reliable, efficient and accurate.

Available at: www.springer.com