Quantum Physics

Effective Mass Dirac-Morse Problem with any kappa-value

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The Dirac-Morse problem are investigated within the framework of an approximation to the term proportional to $1/r^2$ in the view of the position-dependent mass formalism. The energy eigenvalues and corresponding wave functions are obtained by using the parametric generalization of the Nikiforov-Uvarov method for any κ-value. It is also studied the approximate energy eigenvalues, and corresponding wave functions in the case of the constant-mass for pseudospin, and spin cases, respectively.

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