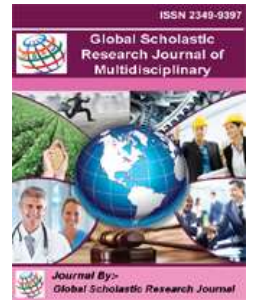




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**NEW EXACT SOLUTION OF NON-RELATIVISTIC SCHROEDINGER EQUATION
FOR NONPOLYNOMIAL POTENTIAL OF PHYSICAL INTEREST**

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Abstract

A set of exact solutions of the non-relativistic Schroedinger equation for central no polynomial potential $V(r) = r^2 + \left(\frac{\alpha r^2}{1 + \beta r^2}\right)$. For each solution, there is an interrelation between parameters of the potential energy α & β and orbital quantum number l . An exact solution of Schroedinger equation for this potential is relevant in the context of quantum optics and field theory with nonlinear Lagrangian.

Key words: Schroedinger equation, exact solution, no polynomial potential

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