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Charmonium Spectrum from Non-Relativistic Quantum Mechanics

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Heavy mesons (quarkonia) behavior is a challenge because of the limitations of the QCD theory at low energies; that is why We propose as a simple approximation to use a nonrelativistic Hamiltonian, which has two divisions: for the close interaction, the Hulthen potential and the distant interaction a root confining potential, theses contributions are neccesary to determine the mass spectra of S. This system is solved using Numerov method and Tri-dimensional harmonic oscillator wavefunction in the Variational method. The results are compared with the available experimental data.

Author: LEAL MESA, Pedro Jose (Universidad Nacional de Colombia (CO))

Co-authors: SANDOVAL USME, Carlos (Universidad Nacional de Colombia); MILANÉS, Diego (Universidad Nacional de Colombia); Mr FIGUEROA FALLA, Pablo Jose (Universidad Nacional de Colombia (CO))

Presenters: LEAL MESA, Pedro Jose (Universidad Nacional de Colombia (CO)); Mr FIGUEROA FALLA, Pablo Jose (Universidad Nacional de Colombia (CO))

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