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Eigensolutions, Shannon entropy and information energy for modified
Tietz-Hua potential
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Abstract:

The Tietz-Hua potential is modified by the inclusion of De Ch1 1Chebhð Þ rre bebhð Þ rre term to the Tietz-Huapotential model since a potential of such type is very good in the description and vibrational energy levels for diatomic
molecules. The energy eigenvalues and the corresponding eigenfunctions are explicitly obtained using the methodology of parametric Nikiforov-Uvarov. By putting the potential parameter b ¼ 0; in the modified Tietz-Hua potential quickly reduces to the Tietz-Hua potential. To show more applications of our work, we have computed the Shannon entropy and Information energy under the modified Tietz-Hua potential. However, the computation of the Shannon entropy and Information energy is an extension of the work of Falaye et al., who computed only the Fisher information under Tietz-Hua potential.

Keywords: Eigensolutions; Schro ¨dinger equation; Shannon entropy; Information Energy; Modified Tietz-Hua potential
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