# THE EXACT SOLUTION OF THE SCHRÖDINGER EQUATION WITH THE MODIFIED COULOMB POTENTIAL

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The exact solution of the Schrödinger equation was obtained. The modified 3D Coulomb potential is in the form

$$U(r,\theta) = -\frac{Ze^2}{4\pi\varepsilon_0}\frac{1}{r} - \frac{\hbar^2\kappa}{2m}\frac{1}{r^2\sin^2\theta},$$

where $\kappa$ is the constant value. This solution may be used for the numerical modeling cross-check.