

IMPLEMENTATION OF THE NEWTON RAPHSON METHOD TO DETERMINE ENERGY STATES OF PARTICLE UNDER THE INFLUENCE OF DOUBLE FINITE WELL POTENTIAL

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ABSTRACT

The purpose of this study is to determine the energy state of the multiple well potential system using the Newton Raphson method. In quantum mechanics, the double square well system can be used to describe the properties of a particle in a potential that has two wells or two obstacles. The double square well system helps describe the properties of particles in more complex potentials in a simpler way, thus facilitating the understanding and analysis of related physical phenomena. While the Newton-Raphson method is one of the numerical methods used to find the roots of a non-linear equation. This method relies on the principle of derivatives as a tool in finding the roots of the equation

The results show that the energy states in a finite well potential system can be obtained by providing an initial guess in the form of the closest energy state of the infinite well potential system. The potential height gives the value of the energy state of the system, where the higher the potential, the higher the energy state of the system. The potential width also affects the high and low energy states, where the wider the distance between potentials, the lower the energy state of the system

Kata Kunci: *double square well potential, Newton-Raphson, energy states*