

Analysis of Deuterium-Tritium Fusion Reaction by PT-Supersymmetric Square Well

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The quantum tunneling probability, fusion cross section, astrophysical S-factor, nuclear phase shifts and thermonuclear reaction rate for $T(d, n)^4\text{He}$ reaction have analyzed by PT-supersymmetric quantum mechanics. An unbroken PT-symmetry complex square well is derived by unbroken supersymmetric quantum mechanics. In a while, scattering and absorption of particles are described by real and imaginary parts of the potential, respectively, the PT-symmetry guarantees that the nuclear well has real energy spectrum.