

Hamburan Partikel Spin-0 dan Partikel Spin- 1 2 dengan Memperhitungkan Interaksi Coulomb = Scattering of a Spin-0 Particle off a Spin- 1 2 Particle with Coulomb Admixtures

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Abstrak

Hamburan partikel spin-0 dan partikel spin-1/2 dipelajari dengan menggunakan model pertukaran meson sederhana berbasis potensial Yukawa yang mengandung suku spin orbit. Interaksi Coulomb tertabiri ditambahkan ke dalam potensial untuk melihat efek Coulomb pada hamburan. Elemen matriks-T direpresentasikan dalam basis tiga dimensi dan dihitung secara numerik. Pengaruh interaksi Coulomb dilihat pada beberapa nilai energi, variasi parameter penabiran, dan kekuatan interaksi Coulomb.

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Scattering of a spin-0 particle off a spin-1/2 particle is investigated theoretically. A simple meson exchange interaction model based on Yukawa potential containing spin-orbit term is taken. Screened Coulomb interaction is added into the potential to investigate Coulomb effect on the scattering. T-matrix is calculated numerically based on three dimensional basis. Coulomb effect on the scattering is shown at various energies and for different screening parameters as well as strength of Coulomb interaction.