RELATIVISTIC EIKONAL APPROXIMATION

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Glauber type representation[1] for the amplitude of the spin 1/2 particle scattering on smooth potentials at high energies of incident particles is derived. The consideration is given in the framework of two-component description and on the basis of the Dirac equation[2].

Then the asymptotic behaviour of the scattering amplitude at high energies and fixed momentum transfers is investigated in the $L_{int} = g : \psi(x) \psi(x) :$ model by means of the functional integration method in quantum field theory. The Glauber-type representation for the scattering amplitude of two spinless particles is obtained[3;4]

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[4] B.M.Barbashov, S.P.Kuleshov, V.A.Matveev, A.N. Sissakian, JINR preprint E2- 4983, Dubna (1970).