

High Energy Proton-Proton Elastic Scattering in the Pomeron Exchange Model

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Abstract: We study high energy proton-proton elastic scattering in the framework of Pomeron exchange model. The cross section of the process are calculated without any free parameters. Our finding is that Pomeron exchange theory gives perfect fits to total cross section at the energy of \sqrt{s} higher than 10 GeV and to differential cross section at the momentum transfer $|t|$ less than 1.5 GeV². For total cross section at lower energy $\sqrt{s} < 10$ GeV and differential cross section at larger momentum transfer region of $|t| > 1.5$ GeV², the Pomeron exchange theory needs to be improved.

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Key words: proton-proton elastic scattering, Pomeron exchange, cross section

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