

TRUNCATED QCD-POMERON AT LHC ENERGIES

A. Lengyel, Z. Tarics

Institute of Electron Physics

(21, Universytets'ka Str. Uzhgorod, 88017, Ukraine;

e-mail: alexander-lengyel@rambler.ru,

tarics1@rambler.ru)

S u m m a r y

The eikonalized elastic proton-proton and proton-antiproton scattering amplitude $F(s, t)$ as a function of the available increasing energy is constructed with the use of the suggestion of a finite sum of ladder diagrams calculated in QCD with a certain number of s -channel gluon rungs and, correspondingly, the powers of logarithms in the total cross section. Explicit expressions for the total cross section involving three and four rungs (four and five prongs) with $\ln^3(s)$ and $\ln^4(s)$ as the highest terms, respectively) are fitted to the all available proton-proton and proton-antiproton total cross section data. Predictions for the pp total cross section at the LHC energy are given.