

### Vector Meson Electro-production in Pomeron Exchange Model

MA Wei-Xing,<sup>1,2,3</sup> LIU Bao-Rong,<sup>4</sup> ZHOU Li-Juan,<sup>3,4</sup> TAN Zhen-Qiang,<sup>4</sup> HE Xiao-Rong,<sup>4</sup> and GU Yun-Ting<sup>4</sup>

<sup>1</sup> Center of Theoretical Nuclear Physics, National Laboratory of Heavy Ion Accelerator of Lanzhou, Lanzhou 730000, China

<sup>2</sup> Institute of High Energy Physics, the Chinese Academy of Sciences, Beijing 100049, China

<sup>3</sup> Department of Information and Computing Science, Guangxi University of Technology, Liuzhou 545006, China

<sup>4</sup> Department of Physics, Guangxi University, Nanning 530004, China

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**Abstract:** Based on Pomeron exchange model, elastic production of vector meson in electro-proton interaction is investigated with both linear and non-linear Pomeron trajectory. A numerical calculation for  $J/\psi$  production is performed. The effect of the energy scale  $s_0$  and photon virtuality  $Q^2$  on differential cross section are also predicted. A good agreement with experimental data is obtained. Our conclusions are that the Pomeron exchange model is a successful description of  $J/\psi$  electro-production, the dependence of the differential cross sections on  $Q^2$  is negligible, the linear trajectory is a good approximation to non-linearity of the Pomeron trajectory, and the value of the energy scale parameter  $s_0$  is dependent on the momentum transfer, namely its effect is moderate at low momentum transfer but it causes no difference at high momentum transfer  $|t| \geq 1.25 \text{ GeV}^2$ .

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