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Electric and Magnetic Form Factors of Proton in Relativistic Constituent Quark Model

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Abstract: Based on relativistic constituent quark (RCQ) model, the electric and magnetic form factors are analyzed. The ratio of the two form factors for the proton G_{E_p}/G_{M_p}, which is an image of its charge and magnetization distributions, is calculated in the light-front formulism of RCQ model. Recently, this ratio was measured at the Thomas Jefferson National Accelerator Facility (JLab) using the polarization technique. The new data presented span the range 3.5 GeV^2<Q^2<5.6 GeV^2 and are well described by a linear Q^2 fit. Also, the ratio $\sqrt{Q^{2}}F_{2p}/k_{p}F_{1p}$ reaches a constant value while Q^2 becomes larger than 2 (GeV)^2. Our calculation results are presented and appear to be consistent with the experimental ones.

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Key words: form factors, relativistic constituent quark model, radial function

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