

Study of Ratio of Proton Momentum Distributions with a Chiral Quark Model

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(Received: 2004-8-3; Revised:)

Abstract: The ratio between the anomalous magnetic moments of proton and neutron has recently been suggested to be connected to the ratio of proton momentum fractions carried by the valence quarks inside it. This moment fraction ratio is respectively evaluated by using constituent quark model and chiral quark model in order to check meson cloud effect. Our results show that the meson cloud effect is remarkable to the ratio of the proton momentum fractions, and therefore, this ratio is a sensitive test for the meson cloud effect as well as for the SU(6) symmetry breaking effect.

PACS: 12.39.Jh, 13.60.Hb, 14.20.Dh

Key words: ratio of proton momentum distribution, anomalous magnetic moments, constituent quark model, chiral quark model

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