

Nucleon Electromagnetic and Axial Form Factors with a Light-front Constituent Quark Model

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In this work we study the effect of scalar spin coupling of constituent quarks on nucleon electroweak properties by introducing a two momentum scales wave function. By comparing the one scale wave function and the two scales wave function models, we found that the last case has shown a reasonable description of static observables and of the ratio $\mu p G_E p / G_M p$ in which the value of the zero of $G_E p$ appears at squared momentum transfer of about 15 GeV^2 . We have also shown results for the axial coupling g_A and Axial Nucleon form factor. The best result for g_A was obtained when the parameters of the nucleon wave function model were such that the experimental value of the neutron magnetic moment is reproduced.

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