

Hidden-Color Effects in Deuteron Structure

We explore the internal structure of the deuteron within the light-front framework, going beyond the traditional proton–neutron description. By incorporating hidden-color degrees of freedom, we model the deuteron as an effective mixture of singlet–singlet and octet–octet color configurations. Our study includes both unpolarized and polarized observables, including the tensor-polarized structure function b_1 , as well as electromagnetic form factors. The results highlight the important role of hidden-color components in shaping the deuteron's spin and partonic structure, providing insights for future spin physics experiments.

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