

Nucleon structure using path-integral hadronization of a quark-diquark model

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Nucleon structure is studied in the context of a quark-diquark model using the path-integral method of hadronization and the Nambu Jona-Lasinio model. Starting from a microscopic model of quarks and scalar and axial-vector diquarks, the nucleon is generated as a quark-diquark relativistic bound state and an effective chiral meson-nucleon Lagrangian is derived. Many of the nucleon physical properties are investigated using a theory of few free parameters.

References

[1] L.J. Abu-Raddad, A. Hosaka, H. Toki, and D. Ebert, *Path-integral hadronization of a quark-diquark model for nucleon structure and interactions*, submitted for publication, (April 2002).