Electromagnetic Form Factors of Deuteron

E. Norvaišas[a], A. Acus[a], J. Matuzas[a] and D.O. Riska[b,c]

[a] *Institute of Theoretical Physics and Astronomy, Vilnius, Lithuania*
[b] *Departament of Physics, University of Helsinki, 00014 Finland*
[c] *Helsinki Institute of Physics*

The ground state with baryon number 2 is axially symmetric, and in Skyrme model is well approximated by a rational map, which represents a direct generalization of Skyrme's hedgehog ansatz for nucleon. The deuteron may be viewed as a canonically quantized version of this ground state configuration. To ensure the spin 1 and isospin 0 for deuteron we put to use six quantum variables–collective coordinates, which form two independent set of angular momentum operators. Here we generalized the model of dibaryons considered in [1]. The chiral symmetric Lagrangian of the model can be expressed in terms of these angular momentum operators. The explicit expressions for the Noether current density operators were derived in terms of collective coordinates and angular momentum operators. We evaluated electromagnetic form factors of the deuteron and compared them with empirical data.

References

[1] T. Krupovnickas, E. Norvaišas and D.O. Riska, Lithuan. J. Phys. **41** (2001) 13.