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Hadron spectroscopy and exotics (experiment and theory)

Experiment: -

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Baryon magnetic moments and form factors in chiral soliton model

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Abstract

During the last decade the interest to baryon structure in experimental and theoretical physics has been increased. Straightforward QCD calculation of physical quantities, however, is complicated and various baryon models were suggested to simplify the problem. In this contribution we present a simultaneous study of the form factors and magnetic momenta of the nucleons and Δ resonances based on SU(2) Skyrme model. We consider the baryon as canonically quantized chiral soliton. The Lagrangian of the model is chiral symmetric, but the boundary conditions break the symmetry. In contrast to semiclassical case, the asymptotic behavior of mass density of baryon at large r falls off exponentially. The model includes two parameters which are evaluated from experimental data. The calculated nucleons electric and magnetic form factors (with exception for neutron electric form factor) are close to the empirical ones [1].

References 1. A. Acus, E. Norvaišas and D.O. Riska, *Physica Scripta*, v. 64, p. 113(2001).

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