

Recent results on nucleon form factors

Ulrich Müller

Institut für Kernphysik, Universität Mainz, Becherweg 45, 55099 Mainz, Germany

The form factors of the nucleon are of fundamental importance for the understanding of the nucleon's internal structure. During the last years, coincidence experiments with polarised electron beam and polarised target or recoil polarimetry have significantly improved the precision of the electromagnetic form factors.

The recent model-independent measurements of the electric form factor of the neutron suggest that its shape may be interpreted as a smooth broad distribution with a superimposed bump at $Q^2 = 0.3(\text{GeV}/c)^2$. As a consequence the corresponding charge distribution in the Breit system would extend to larger radii than previously assumed, suggesting an interpretation as pion cloud. With regard to this realisation, all existing data of the electric and magnetic form factors of the proton and the neutron are reanalysed, using a phenomenological fit and a fit inspired by the constituent quark model. It is shown that it is possible to describe all four form factors coherently with both fits and that they all show the signal of the pion cloud.