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Nucleon Elastic and Transition form factors from the Dyson-Schwinger Equations¹

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Recent progress in the bound-state problem in continuum QCD has produced a consistent treatment of the nucleon and its resonances. These studies predict the presence of strong diquark correlations within baryons, whose impact on the nucleon elastic and transition form factors will be illustrated. For example, the Roper resonance is found to be the nucleon's first radial excitation and consists of a core of three dressed-quarks whose charge radius is 80% larger than the proton analogue. This core is complemented by a meson cloud which reduces the observed Roper mass by about 20%, however the quark core is revealed to probes with $Q^2 > 3M_N^2$.

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