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Baryon properties from direct solutions of the Poincare-covariant three-body Faddeev equation

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Nucleons, fundamental blocks of the world, carry almost all mass of the visible Universe. In Standard Model, nucleons are bound states of quarks and gluons via strong interaction which is described by quantum chromodynamics (QCD). Nucleons are members of a large family of baryons. Non-perturbative features of QCD, confinement and dynamical chiral symmetry broken, are the key to understand baryon properties. Dyson-Schwinger equations (DSEs) are a powerful tool of non-perturbative QCD, which have made numerous progress in recent years. In the talk, I will present latest results of DSEs on baryon properties by rigorously solving a Poincaré-covariant Faddeev equation without a diquark assumption, e.g., mass spectrum from light to heavy systems, nucleon tensor charges, nucleon electromagnetic form factors, and etc.

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