# Nucleon Form Factors in Different Forms of Relativistic Kinematics

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The qualitative differences between nucleon form factors calculated with single quark currents in instant, front and point form kinematics are illustrated by means of simple proton wave function models. The kinematic subgroups in the three forms of kinematics are O(3), O(1,2) and SO(1,3) respectively. Single quark currents may be employed to specify spectator currents that are conserved and Lorentz covariant. With instant and front form kinematics this construction provides impulse approximations, in which the baryon form factors depend on the spatial structure of the bound state wave function. Point form kinematics leads to nontrivial point limit form factors, when the extent of the wave function model is scaled unitarily to zero. With instant and front form kinematics the form factors become independent of momentum transfer in that limit. In point form kinematics elastic form factors as functions of $\eta = (v_{out} - v_{in})^2/4$ are independent of the target mass. With a simple rational wave function model for pointlike quarks the point limit provides qualitative agreement with the empirical proton form factors over the range $0 \leq \eta \lesssim 1$. With instant and front form kinematics similar agreement requires finite values for the mean square matter radius.

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