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Origins and impacts of dynamical diquark correlations

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Modern experimental facilities, new theoretical techniques for the continuum bound-state problem and progress with lattice-regularized QCD may have provided indications that soft quark+quark (diquark) correlations play a crucial role in hadron physics. For example, theory indicates that the appearance of such correlations is a necessary consequence of dynamical chiral symmetry breaking, viz. a corollary of emergent hadronic mass that is responsible for almost all visible mass in the universe; experiment has uncovered signals for such correlations in, for instance, the flavour-separation of the proton's electromagnetic form factors; and phenomenology suggests that diquark correlations might be critical to the formation of exotic multiquark hadrons. A broad spectrum of such information is evaluated in this talk, with a view to consolidating the facts and therefrom moving toward a coherent, unified picture of hadron structure and the role that diquark correlations might play.

session

C. Hadron Structure

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