

XVth Quark Confinement and the Hadron Spectrum



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Hadron Structure: Perspective and Insights

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The bulk of visible mass emerges from nonperturbative dynamics within quantum chromodynamics (QCD) - the strong interaction sector of the Standard Model. Following many years of development and refinement, continuum and lattice Schwinger function methods have recently joined in revealing the three pillars that support this emergent hadron mass (EHM); namely, a nonzero gluon mass-scale, a process-independent effective charge, and dressed-quarks with constituent-like masses. One may argue that EHM and confinement are inextricably linked; and theory is now working to expose their manifold and diverse expressions in hadron observables and highlight the types of measurements that can be made in order to validate the paradigm. This presentation will sketch of the role played by EHM in shaping hadron parton distribution amplitudes and functions; informing the calculation of fragmentation functions; and moulding hadron charge and mass distributions.

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