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A New, Analytic, Non-Perturbative, Gauge-Invariant Formulation of Realistic QCD

Friday, 14 September 2012 15:30 (25 minutes)

Summary

This presentation will describe in some detail each of the adjectives of the title. This approach is less than three years old; it is analytic in the sense that QCD amplitudes can be estimated using pencil and paper, or calculated in terms of Meijer G-functions; formal gauge invariance can be assured by a long-overlooked rearrangement of the Schwinger Generating Functional, and is made explicit as all gauge-dependent gluon propagators cancel as the sum of all gluon exchanges between any pair of quark lines is performed. Two, new non-perturbative properties appear, Effective Locality, and a need for Transverse Imprecision. Quark-quark and nucleon-nucleon binding potentials are easily found.

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