

Confirming the action of the Schwinger mechanism in QCD

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In this talk, we present a short review of the emergence of a dynamical gluon mass through the action of the Schwinger mechanism. The linchpin of this mechanism is the dynamical formation of longitudinally coupled massless bound-state poles in the vertices of the theory, and especially in the three-gluon vertex. The presence of these poles, in addition to causing the infrared saturation of the gluon propagator, also induces a modification (“displacement”) to the Ward identity of the three-gluon vertex, proportional to the form factor associated with the pole. Here we will show how this displacement signal has been confirmed through a suitable combination of inputs obtained from lattice QCD.

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