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Conformality, dynamical chiral symmetry breaking and confinement: interplay and cartography of gauge-fermion dynamics

Wednesday 25 September 2024 14:50 (20 minutes)

We study the interplay of colour confinement and dynamical symmetry breaking dynamics in gauge theories coupled to fermions. We provide a first-principles analysis employing the functional Renormalisation Group. We analyse the landscape of theories spanning from QCD-like to the conformal window, showing evidence for walking dynamics. Employing bosonisation techniques we access fundamental properties of the strongly coupled theories such as the relation between fundamental scales, the chiral condensate and the constituent fermion masses. Last we provide a quantitative estimate for the lower boundary of the conformal window.

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