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Confining vs. conformal scenario for $SU(2)$ with adjoint fermions. Gluonic observables.

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Walking technicolor is a mechanism for electroweak symmetry breaking, alternative to the Higgs field. The Higgs mechanism is provided by chiral symmetry breaking in the technicolor theory. Essential ingredient is the vicinity to an IR fixed point, which could reconcile technicolor to the electroweak precision tests.

$SU(2)$ with two Dirac adjoint fermions has been proposed as a candidate for walking technicolor. Understanding whether this theory is confining or IR-conformal is a challenging problem, which can be addressed by means of numerical simulations.

We have pointed out that a clean signal for the existence of an infrared fixed point in this theory can be obtained by looking for signatures in the gluonic sector. In this talk, the technical details of our calculations and possible systematic errors are discussed. Although those measurements are technically difficult, they can be kept under good control even with a limited number of configurations.

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talk

Primary author: PATELLA, Agostino (Swansea University)

Co-authors: Dr RAGO, Antonio (Bergische Universitat Wuppertal); Dr LUCINI, Biagio (Swansea University); Dr PICA, Claudio (CP3-Origins, Odense); Dr DEL DEBBIO, Luigi (Edinburgh University)

Presenter: PATELLA, Agostino (Swansea University)

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