ID de Contribution: **5** Type: **Non spécifié**

Taming Gribov copies via the horizon restriction: done and to do (50+10)

mercredi 8 novembre 2017 15:00 (1 heure)

A possible way to deal with (small) Gribov copies in the Landau gauge is to restrict the domain of integration of the gauge field variables. Such pioneering work was carried out by Gribov himself at leading order, and improved upon to all orders by Zwanziger, an effort culminating in an effective GZ action with dynamical mass scale. We briefly review this construction, using the inverse ghost propagator as "diagnostic tool"and we mention some underlying assumptions.

A major shortcoming of the original effective action was the incompatibility with BRST invariance. Recent insights allowed to reformulate it into a BRST symmetric version, thereby also opening the road to generalizing the Gribov-Zwanziger approach to other classes of gauges. We pay particular attention to the linear covariant gauge.

We discuss how dynamical effects can alter the action, resulting in the formation of (BRST invariant) d=2 condensates. A shortcoming of the current approach is that these dynamical mass scales are for now obtained by fitting to lattice data, and we propose a strategy to search for self-consistent gap equations. It remains to be seen whether such scales will be only qualitatively, or also quantitatively compatible with lattice data.

At last, we briefly turn to the finite T extension when the Polyakov loop is added to the model via a temporal background gauge field (see other talks). We discuss and illustrate how previous work (using the GZ original action) is at odds with background gauge invariance, a fact under current remediation as this can be related to the lack of BRST invariance. Though, even this improvement leaves important challenges, also present in other approaches (see also other talks).

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