ID de Contribution: **12**   Type: **Non spécifié**

Bootstrap for Lattice Yang-Mills Theory (T: 50mn + Q: 10mn)

lundi 9 mai 2022 11:30 (1 heure)

I will speak about my recent work with Zechuan Zheng where we study the SU(Nc) lattice Yang-Mills theory in the 't Hooft limit $Nc \rightarrow$ infinity, at dimensions D=2,3,4, via the numerical bootstrap method. It combines the Makeenko-Migdal loop equations, with the cut-off L on maximal length of Wilson loops, and the positivity conditions on certain correlation matrices. We thus obtain rigorous upper and lower bounds on the plaquette average at various couplings. The results are quickly improving with the increase of the cutoff L. In particular, for D=4 and L=16, the upper bound data in the most interesting weak-coupling phase are not far from the Monte-Carlo results and they reproduce well the 3-loop perturbation theory. We also attempt to extract the information about the gluon condensate from this data. Our results suggest that bootstrap can provide a tangible alternative to, so far uncontested, the Monte Carlo approach. I will also mention our bootstrap results for an "unsolvable" two-matrix model in the large N limit, where this method appears to be superior in efficiency over Monte Carlo.

Orateur: Prof. KAZAKOV, Volodya (LPENS)

Classification de Session: Morning chair: Organizer