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Stabilizing Perturbative Yang-Mills Free Energy with Gribov Quantization

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We evaluate the free energy of the Yang-Mills theory using the Gribov quantization that copes with non-perturbative resummation. The magnetic scale is automatically incorporated in the framework and we find it efficient to stabilize the perturbative expansion of the free energy. In the range of the temperature $T=T_c \sim 2T_c$ major uncertainty in our results comes from the non-perturbative running coupling that is adopted from the lattice simulation, while the convergence above $2T_c$ is impressively robust.

Summary

based on arXiv:1304.8004 [hep-ph]

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