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Topological susceptibility, scale setting and universality from $Sp(N_c = 2N)$ gauge theories

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In this contribution, we report on our study of the properties of the Wilson flow and on the calculation of the topological susceptibility of $Sp(N_c = 2N)$ gauge theories for $N = 1, \dots, 4$.

The Wilson flow is shown to scale according to the quadratic Casimir operator of the gauge group, as was already observed for $SU(N_c)$, and the commonly used scales t_0 and w_0 are obtained for a large interval of the inverse coupling for each probed value of N_c .

The continuum limit of the topological susceptibility is computed and it is conjectured that it scales with the dimension of the group. Our estimates of the topological susceptibility and the measurements performed in the $SU(N_c)$ Yang-Mills theories by several independent collaborations allow us to test this conjecture and to obtain the universal large- N limit of the rescaled topological susceptibility.

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