

Lattice 2024



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## The imaginary- $\theta$ dependence of the $SU(N)$ spectrum

*Monday, 29 July 2024 12:35 (20 minutes)*

In this talk we will report on a study of the  $\theta$ -dependence of the string tension and of the mass gap of four-dimensional  $SU(N)$  Yang-Mills theories. The spectrum at  $N=3$  and  $N=6$  was obtained on the lattice at various imaginary values of the  $\theta$  parameter, using Parallel Tempering on Boundary Conditions to avoid topological freezing at fine lattice spacings. The coefficient of the  $O(\theta^2)$  term in the Taylor expansion of the spectrum around  $\theta=0$  could be obtained in the continuum limit for  $N=3$ , and on two fairly fine lattices for  $N=6$ .

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