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Computing the topological susceptibility from fixed topology QCD simulations

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The topological susceptibility is a very important quantity in QCD, which can be computed using lattice methods. However, at fine lattice spacing, or when using high quality chirally symmetric quarks, typical simulation algorithms tend to become stuck in a single topological sector. In such cases the computation of the topological susceptibility is not anymore straightforward. Here we present two methods to extract the topological susceptibility from lattice QCD simulations restricted to a single topological sector. The first method is based on the correlation function of the topological charge density, while the second method is based on measuring the topological charge within spacetime subvolumes. Numerical results for QCD obtained by using both methods are presented.

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