Contribution ID: 11 Type: not specified

A new method for measuring high spin glueball states on the lattice

To test the hypothesis that glueballs lie on the pomeron trajectory, accurate theoretical calculations for the masses of high spin glueball states are required. Current methods have been used to determine glueball masses in D=2+1 up to J=8 (arXiv:1909.07430), but these calculations quickly become cumbersome for very high spins. We present a new method, which builds operators by calculating staggered fermion lattice propagators. We look at some preliminary results for masses of low spin glueball states in 2+1D U(1) and SU(2) theories using the new method, and present the progress made so far in applying this method to high spin states.

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