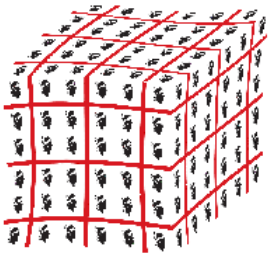

Contribution ID: **109** Type: **not specified**

Very high order lattice perturbation theory for Wilson loops

Tuesday, 15 June 2010 14:50 (20 minutes)

Employing the method of numerical stochastic perturbation theory we compute Wilson loops W_{NM} of moderate sizes $N \times M$ up to loop order $n = 20$. Results are presented for both plaquette and tree-level Symanzik gauge actions. Based on a hyperbolic fit ansatz we investigate the convergence behaviour on finite lattice sizes for both actions. It is shown that boosted perturbation theory improves the convergence of the series significantly for the Wilson gauge action. We compute the dependence of the difference with the Monte Carlo results ($\delta W_{11} = W_{11,PT} - W_{11,MC}$) on the lattice spacing a. Our data show that with inceasing loop order n the magnitude of a spurious term proportional to $a2$ strongly decreases. We give some estimate to the gluon condensate $$.

Please, insert your presentation type (talk, poster)

talk

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