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A worm-inspired algorithm for the simulation of Abelian gauge theories

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We present an algorithm in which the all-order strong coupling expansion of the Abelian U(1) gauge theory with Wilson plaquette action is sampled. In addition to the vacuum closed surface graphs of the partition function we propose to also allow for a class of defects (boundaries) related to Wilson loops in the ensemble. The efficiency of our scheme in estimating various observables is compared to a standard Metropolis algorithm.

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talk

Primary authors: KORZEC, Tomasz (HU Berlin); Prof. WOLFF, Ulli (HU Berlin)

Presenter: KORZEC, Tomasz (HU Berlin)

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