FAKULTÄT für PHYSIK
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PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING

MLL-KOLLOQUIUM

Donnerstag, 11.06.2015, 16^{15} Uhr

Seminarraum 127, TUM, Physik II, Erdgeschoss/Nord
Treffen zum gemeinsamen Kaffee 16 Uhr

Prof. Tilo Wettig

(Univ. Regensburg)

Induced QCD with two bosonic flavors

Strong-coupling approaches to lattice QCD are useful since they allow for analytical investigations and can lead to alternative simulation algorithms if a sign problem is present. To go beyond the strong-coupling limit, the gauge action needs to be included. In the past, several ideas to induce the gauge action by means of auxiliary fields were proposed. Here, we follow a proposal of Budczies and Zirnbauer (BZ), which has the unique advantage of using only a small number of auxiliary bosons (N-1 bosons in the case of gauge group SU(N)). We show, by a combination of analytical and numerical results, that the BZ discretization has a continuum limit in the Yang-Mills universality class. Using this discretization, we can change the order of integration in the QCD path integral to arrive at formulations in which the gauge fields have been integrated out. We briefly discuss such dual representations of lattice QCD.

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