

Gemeinsame Veranstaltung von
Humboldt-Universität zu Berlin, Institut für Physik
(Theorie der Elementarteilchen / Computerorientierte Theoretische Physik)
DESY, Zeuthen

SEMINAR Feldtheorie auf dem Gitter und Phänomenologie der Elementarteilchen

Am Dienstag, dem **19 Dezember**, um **15:30 Uhr s.t.** spricht

Prof. **Bernd A. Berg**

Florida State University – Tallahassee

zum Thema

Critical Exponents of U(1) Lattice Gauge Theory at Finite Temperature

Abstract

The results of multicanonical Monte Carlo simulation of pure compact U(1) lattice gauge theory on $N_\tau N_s^3$ lattices are presented. For $N_\tau = 2, 3, 4, 5, 6, 8$ and on symmetrical $N_\tau = N_s$ lattices phase transition points are located and a $N_s \rightarrow \infty$ finite size scaling analysis is attempted. Evidence is found that the transition is second order for our fixed values of N_τ , but for $N_\tau \geq 4$ not in the universality class of the 3d XY model. Within our numerical accuracy the critical exponents do not depend on $N_\tau = 4, 5, 6$ and are consistent with the 3d Gaussian values. As the 3d Gaussian fixed point is known to be unstable, the scenario of a yet unidentified non-trivial fixed point close to the 3d Gaussian emerges.

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(Lageplan: http://linde.physik.hu-berlin.de/images/lageplan_neu.gif)

Fahrverbindungen: S-Bahn-Station Adlershof

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