

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 Montag, dem **8. November 2010**, um **16:00 Uhr s.t.** spricht

Jens Braun

Friedrich-Schiller-Universität Jena

zum Thema

**On the Dynamics of $SU(N)$, $Sp(2)$ and
 $E(7)$ Yang-Mills Theory close to the Phase
Transition.**

Abstract

The nature of the confinement phase transition in $d=3+1$ dimensions in various non-abelian gauge theories is discussed. Results for the order-parameter potential, namely the Polyakov-loop potential, from a first-principle functional renormalization group approach are presented and the order of the phase transition in $SU(N)$, $Sp(2)$ and $E(7)$ Yang-Mills theory is discussed. Moreover, we present a simple criterion for quark confinement based on the infrared behavior of gluon and ghost 2-point functions in a gauge-fixed formulation. Our results suggest that the order of the phase transition in non-abelian gauge theories can be related to the eigenvalue distribution of the order-parameter potential close to the phase transition.

Ort: Humboldt-Universität zu Berlin, Institut für Physik
Newtonstraße 15, 12489 Berlin-Adlershof, **Raum 1'202**
(Lageplan: http://linde.physik.hu-berlin.de/images/lageplan_neu.gif)

Web: <http://latticeseminar.desy.de/>