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 **14. April, um 15:30 Uhr s.t.** spricht

Yoshiyuki Nakagawa

Osaka University

zum Thema

Lattice study of the Coulomb gauge propagators in SU(3) Yang-Mills theory

Abstract

The properties of the gluon and ghost propagators are of prime interest in exploring the mechanism of color confinement and several approaches have been used to investigate their behaviors in the infrared region: lattice QCD simulations, Dyson-Schwinger equation and functional renormalization group equation studies.

In this seminar, I report on the results of quenched lattice QCD simulations of the gluon and ghost propagators. The ghost propagator diverges stronger than the free propagator in the infrared limit and shows good scaling. The transverse gluon propagator, in contrast, is suppressed in the infrared region, and we need a conservative data cut to see a scaling behavior. For the time-time component of the gluon propagator, we suffer from serious discretization effects and it does not show scaling even if we apply the conservative cut. I also show the latest results for the gluon propagators with the log-U definition for gauge fields.

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

Web: `http://www-zeuthen.desy.de/~stschaef/seminar/seminar.html`