

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 **23 Mai**, um **15:30 Uhr s.t.** spricht

Dr. Habil. Martin Hasenbusch

University of Pisa

zum Thema

**HMC algorithm for two-flavour lattice
QCD: Schwarz preconditioning with
overlapping domains**

Abstract

We discuss a variant of the Schwarz-preconditioned HMC algorithm. In contrast to the original proposal of Lüscher, we apply the domain decomposition only in one lattice direction. This is sufficient to get a small condition number for the approximate fermion matrix that results from the decomposition. The advantage of the one-dimensional decomposition is that it becomes practical to iterate the decomposition and to work with overlapping domains. Tests are performed for standard Wilson fermions and the Wilson gauge action at $\beta = 5.6$, which corresponds to $a \approx 0.08$ fm on lattices up to $24^3 \times 32$.

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)

Fahrverbindungen: S-Bahn-Station Adlershof

Web: <http://www-zeuthen.desy.de/~shindler/seminar/seminar.html>