

The Tenth International Workshop on Lattice QFT and Numerical Analysis (QCDNA X)



Contribution ID: 1

Type: **Talk**

An Eigensolver for the Hermitian Dirac Operator with Multigrid Acceleration

Thursday, 29 June 2017 11:15 (30 minutes)

In this talk we present a Davidson type eigensolver combined with the DD- α AMG multigrid solver library. The basic Davidson method is adjusted to our multigrid method and the structure of the hermitian Dirac operator in a way that both methods benefit from each other.

We compare the resulting eigensolver with a Chebychev filtered Arnoldi method (PARPACK) and the multi purpose eigensolver library PRIMME based on a variety of scaling and performance studies.

Title

An Eigensolver for the Hermitian Dirac Operator with Multigrid Acceleration

Primary authors: Mr STREBEL, Artur (University of Wuppertal); Dr ROTTMANN, Matthias (University of Wuppertal); Prof. FROMMER, Andreas (University of Wuppertal); Dr KAHL, Karsten (University of Wuppertal)

Presenter: Mr STREBEL, Artur (University of Wuppertal)