

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



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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- $\alpha$ 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

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