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Double pass variants for multi-shift BiCGStab(l)

Tuesday, 15 June 2010 18:00 (5 minutes)

In analogy to Neubergers double pass algorithm for the Conjugate Gradient inversion with multi-shifts we introduce a double pass variant for BiCGstab(l). A possible application is the Overlap Operator of QCD at non-zero chemical potential, where the kernel of the sign function becomes non-Hermitian. The sign function can be replaced by a partial fraction expansion, requiring multi-shift inversions. We compare the performance of the new method with other available algorithms, namely partial fraction expansions with restarted FOM inversions and the Krylov-Ritz method using nested Krylov subspaces.

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Poster

Primary author: HEYBROCK, Simon (University of Regensburg)

Presenter: HEYBROCK, Simon (University of Regensburg)

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