

Parallel Inclusion-Exclusion Algorithm on Revealing Pseudospectra

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Pseudospectra have been shown to provide additional and important insights and to capture the behavior of non-normal operators better than only relying on eigenvalues [3]. An algorithm, called Inclusion-Exclusion (abbrv. IE), for computing pseudospectra based on successive pruning of any arbitrary domain surrounding the pseudospectrum was proposed in [2] and was shown to have great potential for improving the standard Grid method. On the other hand, even though algorithm IE is robust and relatively easy to implement, an important challenge is its parallel implementation. In this presentation we focus on this aspect, discussing the difficulties as well as some solutions, building on a previous approach described in [1], and evaluating performance in relation to existing techniques.

References

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