

Computations on Graph Laplacians

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Significant progress has been made in fast linear solvers for graph Laplacians over the last decade. However, the complexity of the proposed algorithms have made them difficult to implement. We compare some simple (but not optimal) graph approximations to several standard preconditioners from numerical linear algebra. We show computational results for both solving linear systems and eigenvalue problems. Our focus is on networks and power-law graphs. Finally, we point out a few open questions.