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Krylov Methods for Difficult Eigenvalue Problems

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We will discuss new Krylov methods for computing eigenvalues and eigenvectors. These include a multigrid method that improves by doing much of the computation on coarse grids. Also, a polynomial preconditioned Arnoldi can significantly speed up difficult eigenvalue problems. And for very difficult problems, a new method needs two iterations, but can compute eigenvectors without either restarting or saving a large subspace.