Power, Inverse, Shifted iteration, determine all eigenvalues

# Power iteration

Will be converges to dominant eigenvalue (if has one)

Following calculation (Rayleigh quotients) calculate the dominant eigenvalue:

# Inverse iteration

Will be converges to dominant eigenvalue (if has one)

Following calculation (Rayleigh quotients) calculate the least dominant eigenvalue:

# Shifted Inverse iteration

Will be converges to middle eigenvalue (if has one)

Following calculation (Rayleigh quotients) calculate the least dominant eigenvalue:

# Determinate of all eigenvalues

## Jacobi method

where

new matrix, diagonals converges to eigenvalues

old matrix

Old matrix from QR decomposition

Old matrix from QR decomposition adjoint version

## Cholesky method

A must be self joint, positive definite

where

new matrix, diagonals converges to eigenvalues

old matrix

Old matrix from LU decomposition

Old matrix from LU decomposition adjoint version

## QR method

A must be self joint, positive definite

where

new matrix, diagonals converges to eigenvalues

old matrix

Old matrix from QR decomposition

Old matrix from QR decomposition