Iterative methods

# Fixed point theorem

The method convergence to the solution each step:

Posteriori error estimation:

Usage:

row norms are need to be less then 1:

# Richardson iteration

Matrix has to be

self-adjoint,

positive definite.

Iteration:

# Jacobian iteration

* A has to be diagonally dominant (diagonal element greater then row absolute sum)
* or B matrix row and col max norm below 1 (add absolute of row or col and select max)
* or spatial radius less than 1: p(B) < 1 (max of the absolute eigenvalues) ()

# Seidel iteration

Seidel iteration is small brother of Jacobian iteration

Convergent if

* B row max norm greater one
* or p(B) < 1

# Other iterations

## Variation principle

## Gradient method

## Conjugate gradient method