

NAME

jacobi - jacobi method

CALLING SEQUENCE

[x,err,iter,flag,res] = jacobi(A,b,x0,maxi,tol)

PARAMETERS

A : matrix of size n-by-n or function returning $A*x$
b : right hand side vector
x0 : initial guess vector (default: zeros(n,1))
maxi : maximum number of iterations (default: n)
tol : error tolerance (default: 1000*%eps)
x : solution vector
err : final residual norm
iter : number of iterations performed
flag : 0 = **jacobi** converged to the desired tolerance within **maxi** iterations
1 = no convergence given **maxi**
res : residual vector

DESCRIPTION

Solves the linear system $Ax=b$ using the Jacobi Method.

EXAMPLE

```
A=makefish(4); b=rand(16,1);x0=zeros(16,1);  
[x,err,iter,flag,res] = jacobi(A,b,x0)  
max_it=16; tol=1000*%eps;  
[x,err,iter,flag,res] = jacobi(A,b,x0,max_it,tol)  
  
deff("y=matvec(x)","y=(A+eye(size(A,1),size(A,1)))*x");  
  
[x,err,iter,flag,res] = jacobi(matvec,b,x0,max_it,tol)  
[x,err,iter,flag,res] = jacobi(matvec,b,x0)
```

AUTHOR

Adaptation by Aladin Group of the corresponding code of netlib/mltemplatesdev (Univ. of Tennessee and Oak Ridge National Laboratory) - 20 March 2001.

SEE ALSO

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