

```
%METODO DI JACOBI
```

```
A=[4,-1,0,-1,0,0; -1,4,-1,0,-1,0; 0,-1,4,0,0,-1; -1,0,0,4,-1,0; 0,-1,0,-1,4,-1; 0,0,-1,
```

```
A = 6x6
```

```
    4    -1     0    -1     0     0
   -1     4    -1     0    -1     0
    0    -1     4     0     0    -1
   -1     0     0     4    -1     0
    0    -1     0    -1     4    -1
    0     0    -1     0    -1     4
```

```
b=[2 1 2 2 1 2]'
```

```
b = 6x1
```

```
    2
    1
    2
    2
    1
    2
```

```
xo=zeros(6, 1);
N_max=100
```

```
N_max = 100
```

```
err=0.00001;
```

```
flag=1;
```

```
D=diag(diag(A));
```

```
J=-inv(D)*(A-D);
```

```
q=inv(D)*b;
```

```
xn=J*xo+q;
```

```
k=1;
```

```
eps(k)=norm(xn-xo)/norm(xn);
```

```
while ((k<=N_max) && (eps(k)>err))
```

```
    xo=xn;
```

```
    xn=J*xo+q;
```

```
    k=k+1;
```

```
    eps(k)=norm(xn-xo)/norm(xn);
```

```
    epsVect(k-1)=eps(k);
```

```
end
```

```
xn
```

```
xn = 6x1
```

```
    1.0000
    1.0000
    1.0000
    1.0000
    1.0000
```

1.0000

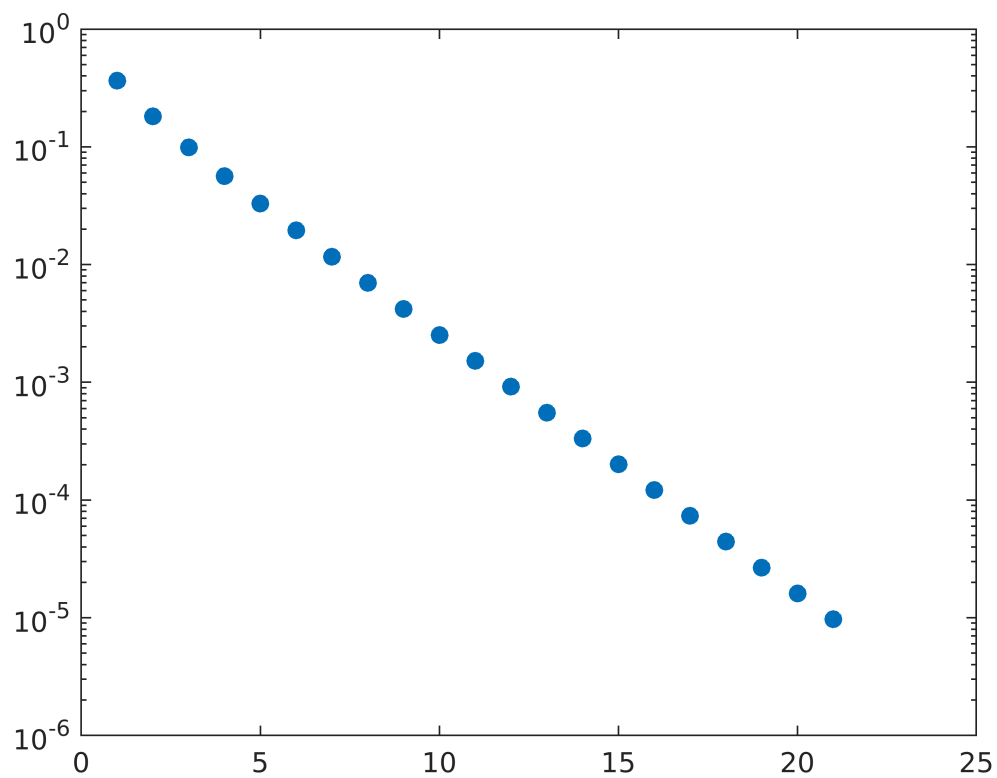
k

k = 22

epsVect'

```
ans = 21x1
    0.3649
    0.1808
    0.0986
    0.0562
    0.0328
    0.0194
    0.0116
    0.0070
    0.0042
    0.0025
    ⋮
    ⋮
```

```
semilogy(epsVect, "o", 'MarkerFaceColor', [0 0.447 0.741]);
```



```
if (k>N_max)
    disp('Il metodo non converge. ');
    flag=0;
end
```