
Programa principal

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Mètode d'Euler modificat

```
clear variables; clc;
```

EDO

```
f=@(t,y)-y+t+1; % y'=f(t,y)
a=0; alpha=1;    % y(a)=alpha
b=1;             % y(b)=...
g=@(t)exp(-t)+t;
texas=[a:0.01:b];
yexas=g(texas);
```

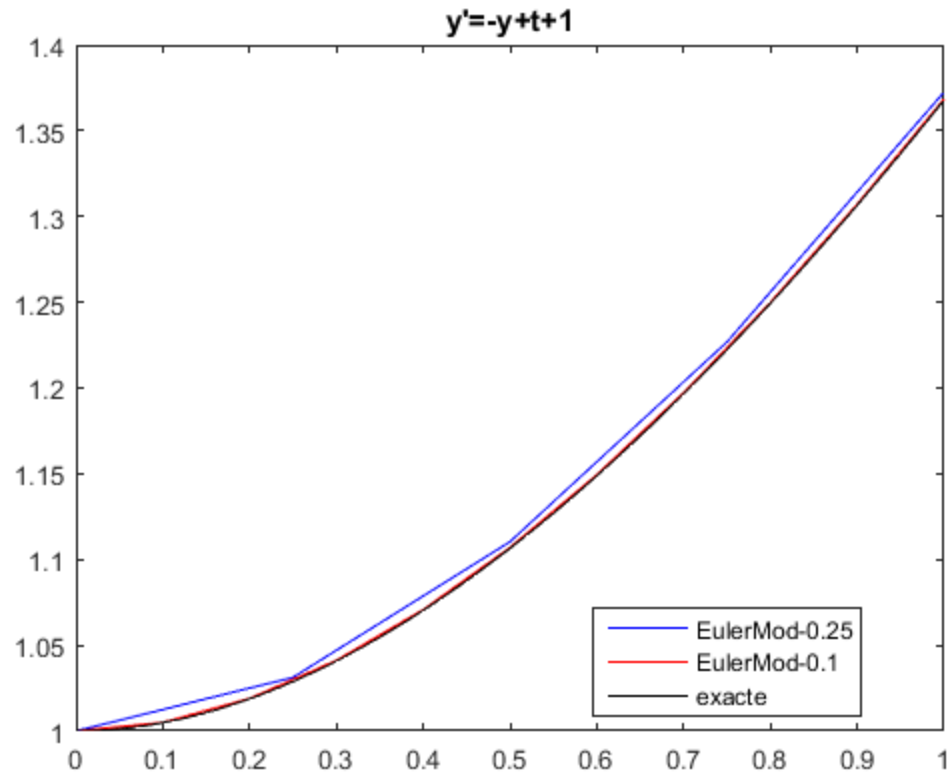
Euler

```
h=0.25; t1=[a:h:b];
[ ye1 ] = EulerMod( f,a,b,h,alpha );
format short g;
disp('      EulerMod      y(t)')
disp([ye1' ,g(t1)'])
h=0.1; t2=[a:h:b];
[ ye2 ] = EulerMod( f,a,b,h,alpha );
```

<i>EulerMod</i>	<i>y(t)</i>
1	1
1.0313	1.0288
1.1104	1.1065
1.2268	1.2224
1.3725	1.3679

Gràfiques

```
plot(t1,ye1,'b',t2,ye2,'r',texas,yexas,'k'),title('y'='-y+t+1')
legend('EulerMod-0.25','EulerMod-0.1','exacte','Location','best')
```



Error

```
yelerror=norm(yel-g(t1))  
ye2error=norm(ye2-g(t2))
```

```
yelerror =  
    0.0078869  
ye2error =  
    0.0016826
```

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