Cvičení PJS
Přechodné děje na transformátoru
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```
% Zakladni technicke parametry transformatoru
Un1=110                 Un1 =  110
Un2=22                  Un2 =  22
Snt=10                  Snt =  10
dP0p=0.3                dP0p =  0.30000
dPfep=dP0p              dPfep =  0.30000
dPkp=1                  dPkp =  1
dPcup=dPkp              dPcup =  1
Ukp=10                  Ukp =  10
I0p=1                   I0p =  1
frekv=50                frekv =  50
omega=2*pi*frekv        omega =  314.16
```

```
% Vypocty parametru nahraniho schematu
Znt=Un1^2/Snt           Znt =  1210

Rk=(dPkp/100)*(Un1^2/Snt)   Rk =  12.100
Rk1=Rk/2                Rk1 =  6.0500
Zk=(Ukp/100)*(Un1^2/Snt)    Zk =  121
Xs=sqrt(Zk^2-Rk^2)      Xs =  120.39
Ls=Xs/omega             Ls =  0.38322
Ls1=Ls/2                Ls1 =  0.19161

Gfe=(dP0p/100)*(Snt/Un1^2)  Gfe =  0.0000024793
Rfe=1/Gfe               Rfe =  403333.33333
Y0=(I0p/100)*(Snt/Un1^2)    Y0 =  0.0000082645
Xh=1/sqrt(Y0^2-Gfe^2)   Xh =  126842.46524
Lh=Xh/omega             Lh =  403.75
```

```
% Kontrola pres komplexni vyjadreni impedance Zk a admitance Y0
Zk2=abs(Rk+i*Xs)
Y02=abs(1/Rfe + 1/(i*Xh))
```

```
Zk2 =  121
Y02 =  0.0000082645
```

```
% Vypocet chodu naprazdno
Tau0=Lh/Rk1
Z0=sqrt(Rk1^2+Xh^2)
I0m=Un1/sqrt(3)*sqrt(2)/Z0
Psi0=atan(Xh/Rk1)
% Rozdil faze oproti ryze induktivnímu proudu
OdchylkaPsi0=Psi0-pi/2
% Integracni konstanta
C0=I0m*sin(Psi0)
```

```
Tau0 =  66.736
Z0 =  126842.46539
I0m =  0.00070808
Psi0 =  1.5707

OdchylkaPsi0 = -0.000047697

C0 =  0.00070808
```

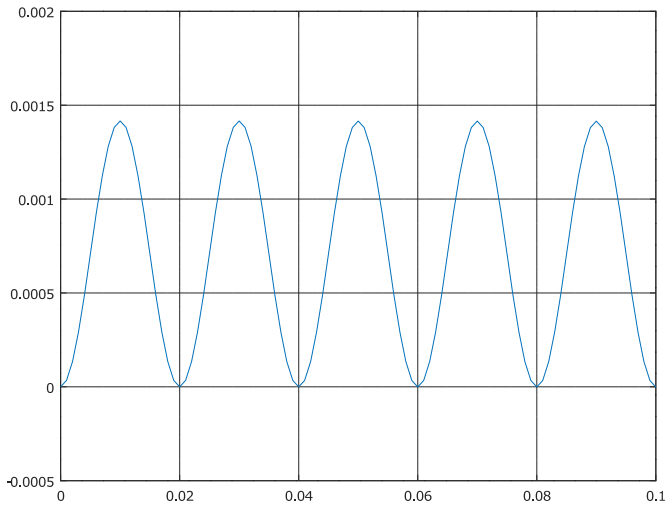
```
% Kontrola pres komplexni vyjadreni I0
I0c=Un1/sqrt(3)/(Rk1+i*Xh)
% Amplituda alternativne
I0m2=sqrt(2)*abs(I0c)
% Faze alternativne
Psi02=angle(I0c)

t=[0:0.001:0.1]';
I0t=C0*exp(-t/Tau0) + I0m*sin(omega*t-Psi0);
plot(t,I0t);
```

```
I0c =  0.000000023881 - 0.000500688230i

I0m2 =  0.00070808

Psi02 = -1.5707
```



```
% Vypocet chodu nakratko
TauK=Ls/Rk
```
TauK = 0.031671
```
Ikm=Un1*Ukp/100/sqrt(3)*sqrt(2)/Zk
```
Ikm = 0.074227
```
PsiK=atan(Xs/Rk)
```
PsiK = 1.4706
```
% Rozdil faze oproti ryze induktivnímu proudu
OdchylkaPsiK=PsiK-pi/2
```
OdchylkaPsiK = -0.10017
```
% Integracni konstanta
Ck=Ikm*sin(PsiK)
```
Ck = 0.073855

```
% Kontrola pres komplexni vyjadreni Ik
Ikc=Un1*Ukp/100/sqrt(3)/(Rk+i*Xs)
```
Ikc = 0.0052486 - 0.0522233i
```
% Amplituda alternativne
Ikm2=sqrt(2)*abs(Ikc)
```
Ikm2 = 0.074227
```
% Faze alternativne
PsiK2=angle(Ikc)
```
PsiK2 = -1.4706

```
% Kontrola pres jmenovity proud
In=Snt/Un1/sqrt(3)
```
In = 0.052486
```
Ikm3=In*sqrt(2)
```
Ikm3 = 0.074227
```
I0m3=I0p/100*In*sqrt(2)
```
I0m3 = 0.00074227

```
figure;
Ikt=Ck*exp(-t/TauK) + Ikm*sin(omega*t-PsiK);
plot(t,Ikt);
```