Stabilita alternátoru 2022

Un1 = 13.5
frekv = 50
omega = 2*pi*frekv

% Transformatory
Snt1 = 200
Ukp1 = 10
Xt1 = Ukp1/100*Un1*Un1/Snt1

Snt2 = 250
Ukp2 = 10
Xt2 = Ukp2/100*Un1*Un1/Snt2

% Vedeni
Xv1=0.3*20/(110*110)*(Un1*Un1)
Xv=Xv1/2

% Nadrazena soustava
Xs=1.1*Un1*Un1/100

% Alternator
CosFi=0.9
Png=200
Sng=Png/CosFi
Xd=250/100*Un1*Un1/Sng
Xdc=50/100*Un1*Un1/Sng

Pt=150
Fi=acos(CosFi)

Qg=Pt/CosFi*sin(Fi)
Qg=Pt*tan(Fi)
Ig=(Pt-i*Qg)/sqrt(3)/Un1
Xc=Xd+Xt1+Xv+Xt2+Xs
E=i*Ig*Xc+Un1/sqrt(3)

Xcc=Xdc+Xt1+Xv+Xt2+Xs
Ec=i*Ig*Xcc+Un1/sqrt(3)

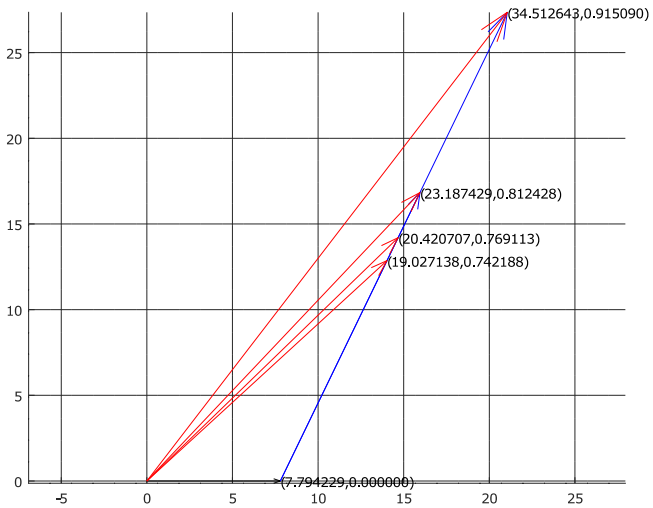
Us=i*Ig*Xs+Un1/sqrt(3)
Ug=i*Ig*(Xs+Xt2+Xv+Xt1)+Un1/sqrt(3)

Theta=angle(E)
Thetac=angle(Ec)
abs(E)
abs(Ec)

Pg=3*abs(E)*Un1/sqrt(3)/Xc*sin(Theta)
Pg=3*abs(Ec)*Un1/sqrt(3)/Xcc*sin(Thetac)
Pmax=3*abs(E)*Un1/sqrt(3)/Xc
Pmaxc=3*abs(Ec)*Un1/sqrt(3)/Xcc

Pmax1=Pmax
Pmax2=0
Xccc=Xdc+Xt1+Xv1+Xt2+Xs
Pmax3=3*abs(Ec)*Un1/sqrt(3)/Xccc

Tm=5
Jmot=Tm*(Snt1*1E6)/(omega*omega)



Un1 = 13.500
frekv = 50
omega = 314.16
Snt1 = 200
Ukp1 = 10
Xt1 = 0.091125
Snt2 = 250
Ukp2 = 10
Xt2 = 0.072900
Xv1 = 0.090372
Xv = 0.045186
Xs = 2.0048
CosFi = 0.90000
Png = 200
Sng = 222.22
Xd = 2.0503
Xdc = 0.41006
Pt = 150
Fi = 0.45103
Qg = 72.648
Qg = 72.648
Ig = 6.4150 - 3.1069i

Xc = 4.2643
E = 21.043 + 27.355i
Xcc = 2.6240
Ec = 15.947 + 16.833i
Us = 14.023 + 12.860i
Ug = 14.673 + 14.203i
Theta = 0.91509
Thetac = 0.81243
ans = 34.513
ans = 23.187
Pg = 150.00
Pg = 150.00
Pmax = 189.25
Pmaxc = 206.62
Pmax1 = 189.25
Pmax2 = 0
Xccc = 2.6692
Pmax3 = 203.13
Tm = 5
Jmot = 10132.11836

```
% Precizni Ec
Iq=abs(Ig)*cos(Theta+Fi)*exp(i*angle(E))
Id=abs(Ig)*sin(Theta+Fi)*exp(i*(angle(E)-pi/2))
E=i*Id*Xc+i*Iq*Xc+Un1/sqrt(3)
Ec2=i*Id*Xcc+i*Iq*Xc+Un1/sqrt(3)
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```
% Alternativne
Ie=Ig'*exp(i*angle(E))
Iq=real(Ie)*exp(i*angle(E))
Id=imag(Ie)*exp(i*(angle(E)-pi/2))
```

Iq = 0.88333 + 1.14830i
Id = 5.5317 - 4.2552i
E = 21.043 + 27.355i
Ec2 = 14.063 + 18.282i

Ie = 1.4487 + 6.9790i
Iq = 0.88333 + 1.14830i
Id = 5.5317 - 4.2552i