

```

function [down,up,dim]=ogranicjenja(testsistem)

switch testsistem
    case 'Caso_9Bus'

[mreza,cvorovi,generatori,transformatori,kompenzatori,Vpqmin,Vpqmax,Sbase]=Caso_9Bus;
        case 'Caso_30Bus'

[mreza,cvorovi,generatori,transformatori,kompenzatori,Vpqmin,Vpqmax,Sbase]=Caso_30Bus;
end

[m,n]=size(cvorovi);cvor=cvorovi(:,1);tip=cvorovi(:,2);
[ngen,nkolg]=size(generatori);gcvor=generatori(:,1);Vgmin=generatori(:,2);
Vgmax=generatori(:,3);Pgmin=generatori(:,4);Pgmax=generatori(:,5);
tmin=transformatori(:,2);tmax=transformatori(:,3);
Qgmin=kompenzatori(:,2);Qgmax=kompenzatori(:,3);

npq=0; npv=0;
for k=1:m
    if tip(k)==0
        sl=cvor(k);
    elseif tip(k)==2
        npq=npq+1;
        pq(npq)=cvor(k);
    elseif tip(k)==1
        npv=npv+1;
        pv(npv)=cvor(k);
    end
end
Pgming=Pgmin;Pgmaxg=Pgmax;
for k=1:ngen
    if gcvor(k)==sl
        Pgming(k)=[]; Pgmaxg(k)=[];
    end
end
down=[Pgming;Vgmin;tmin;Qgmin]';
up=[Pgmaxg;Vgmax;tmax;Qgmax]';
dim=length(down);

```