

## LAMPIRAN A

### *Syntax* MATLAB yang Digunakan

File mod\_mds.m

```
m = 3; c = 1; k = 2;
pm = 0.4; pc = 0.2; pk = 0.3;
%
A = [ 0      1
      -k/m  -c/m];
B1 = [ 0      0      0
      -pm  -pc/m  -pk/m];
B2 = [ 0
      1/m];
C1 = [-k/m  -c/m
      0      c
      k      0];
C2 = [ 1 0 ];
D11 = [-pm  -pc/m  -pk/m
      0      0      0
      0      0      0];
D12 = [1/m
      0
      0 ];
D21 = [0 0 0];
D22 = 0;
G = pck(A,[B1,B2],[C1;C2],[D11 D12;D21 D22]);
```

File wts\_mds.m

```
nuWp = [1 1.8 10]; dnWp = [1 8 0.01];
gainWp = 0.95;
Wp = nd2sys(nuWp,dnWp,gainWp);
nuWu = 1; dnWu = 1;
gainWu = 10^(-2);
Wu = nd2sys(nuWu,dnWu,gainWu);
```

File olp\_mds.m

```
systemnames = ' G Wp Wu ';
inputvar = '[ pert{3}; dist; control ]';
outputvar = '[ G(1:3); Wp; -Wu; -G(4)-dist ]';
input_to_G = '[ pert; control ]';
```

```

input_to_Wp = '[ G(4)+dist ]';
input_to_Wu = '[ control ]';
sysoutname = 'sys_ic';
cleanupsysic = 'yes';
sysic

```

File sim\_mds.m

```

systemnames = ' G ';
inputvar = '[ pert{3}; ref; dist; control ]';
outputvar = '[ G(1:3); G(4)+dist; ref - G(4) - dist ]';
input_to_G = '[ pert; control ]';
sysoutname = 'sim_ic';
cleanupsysic = 'yes';
sysic

```

File h2\_mds.m

```

olp_mds;
[Ga,Gb,Gc,Gd]=unpck(sys_ic);
[Gnum,Gdenum]=ss2tf(Ga,Gb,Gc,Gd,1);
s=zpk('s');
Pnum=[(-0.4*s^4)-(3.2*s^3)-(0.004*s^2);(-0.4*s^3)-
(3.2*s^2)-(0.004*s);(-0.38*s^2)-(0.684*s)-
(3.8);0;(0.4*s^2)+(3.2*s)+0.004];
Pdenum=[(s^4)+(8.333*s^3)+(3.3433*s^2)+(5.3367*s)+0.006
7];
P=Pnum/Pdenum;

%Augmented Plant
GenP=augw(P,[0],[0]);

%Solusi Kendalier dengan H2
[K2,CLP,GAM]=h2syn(GenP,1,1);
disp('NORM H2')
NORMH2 =GAM

[CLPa,CLPb,CLPc,CLPd]=ssdata(CLP);
clph2=pck(CLPa,CLPb,CLPc,CLPd);
poles=spoles(clph2)

%matriks SYS K2
[Ka,Kb,Kc,Kd]=ssdata(K2);
K2=pck(Ka,Kb,Kc,Kd)

```

File hin\_mds.m

```
nmeas = 1;  
ncon = 1;  
gmin = 1;  
gmax = 10;  
tol = 0.001;  
hin_ic = sel(sys_ic,4:6,4:5);  
[K_hin,clp] = hinfsyn(hin_ic,nmeas,ncon,gmin,gmax,tol);
```

# LAMPIRAN B

## Diagram Kerja SIMULINK

