function Circuit1Cap(R1, R2, R3, R4, C)

% |-R4--C--|

% Vi---R1--|--R2----|--Vo

% |

% R3

% \_

K = R3/(R1+R2+R3);

tp = (R4 + ll(R2, ll(R1,R3)))\*C;

tz = (R2+R4)\*C;

fp = 1/(2\*pi\*tp);

fz = 1/(2\*pi\*tz);

j = sqrt(-1);

f\_start = 10; f\_stop = 100000;

step = (f\_stop - f\_start)/1024; freq = f\_start:step:f\_stop;

Ts = K\*(1+(j.\*2.\*pi.\*freq).\*tz)./(1+(j.\*2.\*pi.\*freq).\*tp);

Ms = 20\*log10(abs(Ts));

Ps = (180/pi)\*angle(Ts);

semilogx(freq,Ms),grid

figure

semilogx(freq,Ps),grid

figure

H = tf([0 K\*tz K],[0 tp 1]);

bode(H)

end

function out = ll(in1, in2) % computes the parallel

out = (in1\*in2)/(in1+in2);

end

>> Circuit1Cap(4300,240000,4300,7300,0.00000001)

