function ak = a\_rectpulsetrain(k,omega0,T1)

if k == 0

ak = omega0\*T1/pi;

else

ak = omega0\*T1/pi\*sin(k\*omega0\*T1)/k\*omega0\*T1;

end









As k becomes bigger and bigger, the reconstruction error in Fourier series became smaller and smaller, and the reconstructed signal becomes closer and closer to the original signal.

function H = Hdiff(omega)

H = sqrt(-1)\*omega;

end

function H = Hfolpf(omega,tau)

H = 1/(1+sqrt(-1)\*omega\*tau);

end



function H = Hautosusp(omega,omegan,zeta)

H = (omegan\*omegan+2\*zeta\*omegan\*(sqrt(-1)\*omega))/((sqrt(-1)\*omega)\*(sqrt(-1)\*omega)+2\*zeta\*omegan\*(sqrt(-1)\*omega)+omegan\*omegan);

end







As omega N / omega 0 ratio became smaller and smaller, the car became more and more sluggish and smoother.