

A priedas. Programinio paketo *Matlab* kodas pradinių pusės automobilio modelio duomenų įvesčiai

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%%% PUSĖS AUTOMOBILIO, SU KELIO NELYGUMŲ NUSTATYMO  
SISTEMA, MODELIS %%%  
%%% HALF CAR MODEL WITH ROAD ROUGHNESS DETECTION  
SYSTEM %%%  
  
clear;  
load ('v10_00a_01_bump_cos_35x5cm.mat');  
load ('front_spring_nonlinear_data.mat');  
load ('rear_spring_nonlinear_data.mat');  
load ('nonlinear_data_v2.mat');  
  
%%% SIMULATION DATA %%%  
  
%Simulation time  
Ts=round(Time(end),2);  
  
%Road profile:  
H=0.05; %height of the bump  
L=0.35; %length of the bump  
WN=2; %switch for White Noise: 1 - ON, 2 - OFF  
  
%Switches:  
sw_k=2; %switch for stiffness: 1 - linear; 2 - non-li-  
near.  
sw_c=2; %switch for damping: 1 - linear; 2 - non-li-  
near.  
Td_damping=0.073; %time delay for shock absorbers  
  
%%% MODEL DATA %%%  
%vehicle parameters:  
v=50/3.6; %vehicle speed in m/s  
mf=45; %unsprung front mass  
mr=35; %unsprung rear mass  
M=814+75+65; %sprung mass (half car mass - 814 kg) +  
driver 75 kg, equipment 65 kg.  
kMf=22600; %linear stiffness of front sprung mass
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kMr=22600; %linear stiffness of rear sprung mass
cMf=1198.3; %passive linear damping of front sprung
mass
cMr=1198.3; %passive linear damping of rear sprung
mass
km=182000; %stiffness of unsprung mass
cm=200; %damping of unsprung mass
wb=2.61; %wheelbase Opel Astra
lf=1.3; %center of gravity to front axle
llf=1.0; %distance from front axle to laser (model);
(to front)
%llr=2.31; %distance from front axle to laser (model);
(to rear)
lr= wb-lf; %center of gravity to rear
Iy=948.75; %inertia moment
g=9.81;

%% LASER COMPENSATION %%

alfa=0; %laser 2 mounting angle from vertical axle;
b=1; %coefficient for filter, Hz
% d=0; %constant for velocity - displacement integra-
tion
% e=0; %constant for acceleration - velocity integra-
tion
% f=0; %constant for velocity - displacement integra-
tion (pitch)
```