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; %lenght 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)
```