

ANNEX A1.: VEHICLE PARAMETERS AND DOUBLE LANE CHANGE DATA

Vehicle parameters are listed in table A.1.

vehicle parameter	value	Description
a	1.51 [m]	front axle to CoG
b	1.25 [m]	rear axle to CoG
L	2.71 [m]	wheelbase
m	1615 [kg]	vehicle mass
J_z	3049 [kg.m ²]	jaw moment of inertia

Table A.1.: Vehicle parameters

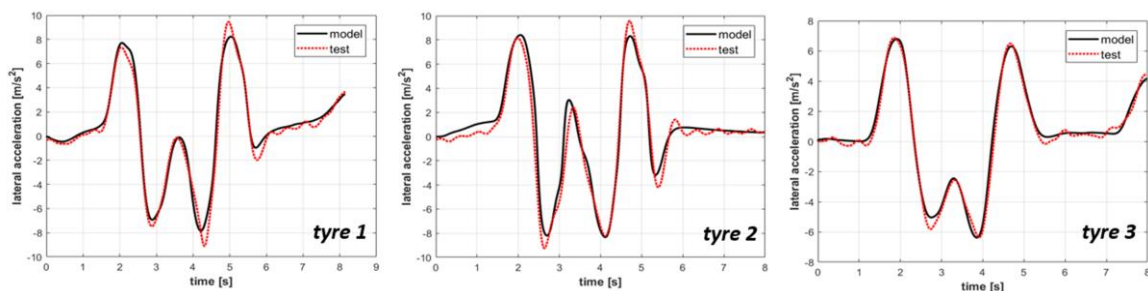


Figure A.1.: Model vs. test for MF-parameters from table A.2.

The Magic Formula axle parameters were determined by matching test results with a nonlinear single track vehicle model for the three different tyres, used in the tests. The match for the lateral acceleration between model and test is shown in figure A.1. The resulting axle characteristics for front and rear axle are shown in figure A.2.

The geometry data for the double lane change, as used in the research, are given in table A.2.

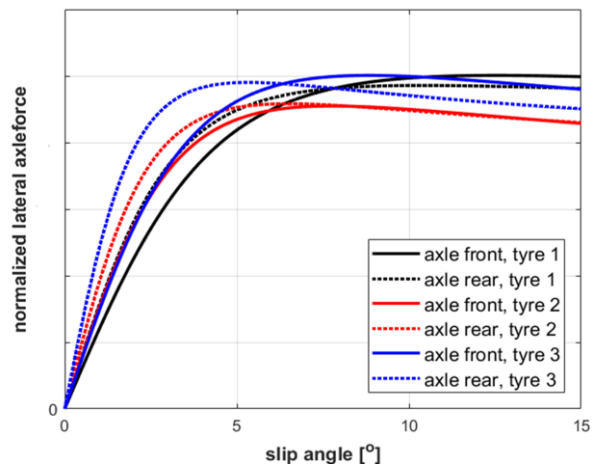


Figure A.2.: Axle characteristics for the three different

Lane Change parameter	value	Description
L₁	15 [m]	Length first part DLC, first lane
L₂	25 [m]	Length second part DLC, second lane
L₂	30 [m]	Length third part DLC, first lane
T₁	30 [m]	Length first transition phase
T₂	25 [m]	Length second transition phase

h₁	1.125 [m]	Half-width first part DLC
h₂	1.465 [m]	Half-width second part DLC
h₃	1.56 [m]	Half-width third part DLC
H	3.5 [m]	DLC offset

Table A.2.: DLC parameters