

Dr Aleksandra Janković, full. Prof., Faculty of Mech. Eng., University of Kragujevac
Mr Ljiljana Veljović, assist., Faculty of Mech. Eng., University of Kragujevac
Mr Života Arsić, assist., Faculty of Mech. Eng., University of Kragujevac

STABILITY OF VEHICLE – ONE FOUR – WHEEL – PLANE MODEL

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A vehicle model with three motion degrees of freedom is described in this paper. This model is suitable for motion stability analyses in longitudinal direction as well as the stability of yaw dynamics. By the action of some casual, external perturbations and internal inertial and centrifugal forces, which appear as a consequent of an inadequately adapted ride velocity to the road the motion stability of the vehicle, can be disturbed. One double-track-model presented here can be four-wheel-steering, also.

Developed software in program language Fortran 90 (Fortran Power Station 4.) enables all calculation as well as graphical presentation.

Key words: road vehicle, steering, stability, yawing .

STABILNOST VOZILA SA ČETIRI TOČKA - RAVANSKI MODEL

U radu je opisan model vozila sa tri stepena slobode. Model je pogodan za analizu stabilnosti kako u slučaju delovanja podužnih tangencijalnih sila tako i za analizu sopstvenih oscilacija plivanja. U model mogu da se uvedu i spoljašnje perturbacione sile kao što je sila vetra, kao i inercijalne sile pri vožnji u krivini. Model je dvoosovinski sa dva traga i uzima u obzir i mogućnost upravljanja sa sva četiri točka.

Razvijen je softver kojim se u programskom jeziku Fortran 90 (Fortran Power Station 4.) izvršavaju sva potrebna izračunavanja i grafička prezentacija rezultata.

Ključne reči: drumsko vozilo, upravljanje, stabilnost, plivanje.