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## INFLUENCE OF THE SUSPENSION SYSTEM CONSTRUCTION ON LONGITUDINAL STABILITY OF PASSENGER CAR

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Thorough theoretical approach that considers relevant braking vehicle parameters produces as a result the influence of front and rear suspension system concept on longitudinal stability of vehicle.

Beside the influence of elastic and dampening elements we have thoroughly considered influence of front and rear wheel guidance based on which we come to the conclusion of the effect front and rear wheel guidance has on dislocation of front and rear axle and suspended vehicle mass as a whole.

This analysis has been made initially without the effect road bumps have which do exist in reality in order to monitor just the effect of suspension system concept on longitudinal stability of vehicle. Afterwards coupled analysis has been made which encompasses, beside the influence of suspension system concept, also road bumps influence.

Calculation of two examples has been made with different rear wheel guidance from which it is possible to notice differences relative to the suspended vehicle mass.

Importance of these research results is in their appliance in defining suspension system and adequate braking system, especially considering the aspect of braking forces correction on rear axle in order to accomplish good longitudinal stability.

**Key words:** passenger car, stability, breaking, suspension

## UTICAJ KONSTRUKCIJE SISTEMA OSLANJANJA NA PODUŽNU STABILNOST PUTNIČKIH VOZILA

Temeljan teorijski pristup koji uzima u razmatranje relevantne veličine kočenog vozila daje kao rezultat uticaj koncepta prednjeg i zadnjeg sistema oslanjanja na podužnu stabilnost vozila.

Pored uticaja elastičnih i prigušnih elemenata detaljno je obrađen uticaj vođenja prednjeg i zadnjeg točka na osnovu koga se dolazi do zaključaka o uticaju vođenja prednjeg i zadnjeg točka na pomeranje prednje i zadnje osovine i oslonjene mase vozila u celini.

Ova analiza je urađena prvo bez uticaja neravnina puta koje realno postoje kako bi se pratio samo uticaj koncepta sistema oslanjanja na podužnu stabilnost vozila. Potom je data spregnuta analiza koja obuhvata, pored uticaja koncepta sistema oslanjanja, i uticaj neravnina puta.

Urađen je proračun dva primera sa različitim zadnjim vođenjem točka iz kojih se vide razlike pomeranja zadnje osovine u odnosu na oslonjenu masu vozila.

Značaj ovih rezultata istraživanja je u njihovoj primeni pri definisanju sistema oslanjanja i odgovarajućeg sistema kočenja, posebno sa aspekta korekcije kočionih sila na zadnjoj osovini u cilju postizanja dobre podužne stabilnosti.

**Ključne reči:** putničko vozilo, stabilnost, kočenje, elastično oslanjanje