

NONUNIFORMITY OF TIRES AND VEHICLE OSCILLATORY COMFORT

The aim of this work was to especially emphasize, within earlier developed non linear dynamic model of the system Driver - Vehicle - Environment, the contribution of radial and lateral nonuniformity of tires to vehicle's vibrations. The dynamic model of the system consisted of:

*functional model of a driver during the straight line motion,
spatial model of a vehicle with 11 degrees of freedom, and
vibration model of driver, for analysis of vertical vibratory loading.*

With use of computer HP 9000/600 SE a simulation was performed, with special emphasis on driver's fatigue due to passenger cars vibration. In the paper is also specially emphasized the contribution of the radial and lateral pneumatic forces nonuniformities to lateral vibrations of the body and front seat of the car and to vibrations of the steering wheel.

Key words: vehicle, oscillatory comfort, tires.

The paper presents the part of research performed for the realization of the project "Modeling of dynamic system D-V-E from the aspect of stability and safety", which is being realized with financial support of the Ministry for Science and technology of Serbia.

NEUNIFORMNOST PNEUMATIKA I OSCILATORNA UDOBNOST AUTOMOBILA

Cilj ovog rada je bio da se u okviru ranije razvijenog nelinearnog dinamičkog modela sistema Vozač - Vozilo - Okruženje posebno istakne doprinos radijalne i bočne neuniformnosti pneumatika vibracijama vozila. Dinamički model sistema obuhvatao je:

*funkcionalni model vozača u toku pravolinijske vožnje,
prostorni model vozila sa 11 stepeni slobode kretanja, i
oscilatorni model vozača, za analizu vertikalnih vibracija.*

Uz korišćenje elektronskog računara HP 9000/600 SE izvršena je simulacija, sa posebnim osvrtom na uticaj pomenutih parametara neuniformnosti pneumatika na zamor vozača usled vibracija putničkog vozila. U radu je posebno istaknut doprinos neuniformnosti radijalne i bočne sile pneumatika bočnim vibracijama karoserije, vertikalnim vibracijama prednjeg sedišta vozila i vibracijama točka upravljača.

Cljučne reči: vozilo, oscilatorna udobnost, pneumatici.

Rad predstavlja deo istraživanja izvršenih za potrebe projekta "Modeliranje dinamičkog sistema V-V-O sa aspekta stabilnosti i bezbednosti" koji se realizuje uz finansijsku podršku Ministarstva za Nauku i tehnologiju Srbije.