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AN INNOVATIVE SUSPENSION SYSTEM FOR GROUND VEHICLES

In the first part of the present paper, we present the theoretical background that led us to the development of an innovative suspension system for ground vehicles. In the second part, we consider a model of a vehicle equipped with this system and we optimise the characteristics of this model, so that both the ride and road holding behaviour of the vehicle be optimum. We then evaluate, by simulation, the performance of a vehicle equipped with the optimised innovative system, by comparing it to an equivalent vehicle equipped with an optimised but conventional suspension system. The conclusions drawn from the simulation results, prove that the performance of the innovative suspension system is superior to a conventional one. This paper is the continuation of three previous papers presented by Spentzas at the 28th ISATA [1] and the ECCC-1 [2] and by Spentzas and Tsolakis at the 31st ISATA [3].

Key words: Ground vehicle's, suspension systems, optimisation

INOVATIVNI SISTEM VEŠANJA ZA DRUMSKA VOZILA

U prvom delu ovog rada predstavljena je terijska pozadina koja nas je dovela do razvijanja novog sistema vešanja kod drumskih vozila. U drugom delu, razmatramo model vozila opremljenog ovim sistemom i iznosimo prednosti ovog modela, tako da vožnja i držanje vozila na putu budu optimalni. Zatim, putem simulacije, procenjujemo funkcionisanje vozila opremljeńog novim optimalnim sistemom, upoređujući ga sa ekvivalentnim vozilom opremljenim optimalnim, ali konvencionalnim sistemom vešanja. Zaključci dobijeni iz rezultata simulacije dokazuju da je funkcionisanje novog sistema vešanja superiorno u odnosu na konvencionalni sistem. Ovaj rad je nastavak tri prethodna rada koje su predstavili Spentzas na 28. ISATA-i[1] i ECCC-1-u [2] i Spentzas i Tsolakis na 31. ISATA-i [3].

Ključne reči: drumsko vozilo, sistem vešanja, optimizacija