

RESEARCHING MOTORCYCLE'S STABILITY AT MOTION

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ABSTRACT: The statistical analysis has shown that motorcycles are common cause of traffic accidents. Besides, in many cases it was confirmed that a driver, just before the traffic accidents occur falls from the motorcycle and therefore his injuries are more serious. In order to study influencing factors to this phenomenon, in this paper were established a simulation model in order to be able to analyse stability of the motorcycle in motion during braking process starting from high initial velocities. An experimental system for verification of simulation models has been developed and used. The obtained results regarding identification of the domain of stability of motorcycle's movement at braking depending on weight status, weight distribution on wheels and used braking strategies, were presented and analysed.

KEY WORDS: motorcycle, breaking, stability, accident, simulation

ISTRAŽIVANJE STABILNOSTI KRETANJA MOTORCIKLA

REZIME: Statistička analiza je pokazala da su motorcikli čest uzrok saobraćajnih nezgoda. Osim toga, u mnogim slučajevima je potvrđeno da vozač, upravo pre nezgode padne i zato su njegove povrede su ozbiljnije. U cilju proučavanja uticajnih faktora na ovu pojavu, u ovom radu je formiran simulacioni model kako bi mogli da analiziraju stabilnost kretanja motocikla tokom procesa kočenja počevši od velikih brzina kretanja. Eksperimentalni sistem za verifikaciju simulacionog modela je razvijen i korišćen. Dobijeni rezultati koji se odnose na identifikaciju domena stabilnosti kretanja motorcikla u procesu kočenja u zavisnosti od masenog stanja, raspodele mase po točkovima i primenjene strategije kočenja analizirani su i prikazani u radu.

KLJUČNE REČI: motorcicl, kočenje, nezgoda, simulacija

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