

¹DEVELOPMENT OF DRIVER MODEL FOR VEHICLE CONTROL DURING STRAIGHT LINE MOTION

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Abstract

Driving the vehicle on a straight line road can be considered as a special case analysis of a Driver Vehicle Environment dynamical system, because, longitudinal vehicle motion means that active driver participates in conditions defined by road and vehicle parameters. In contemporary literature, there are some attempts of modelling the mentioned system in the case of straight line drive, but, so far, there is no generally accepted model of a driver. The problem is more complex due to fact that a very complex motor and transmission behaviour must be assumed in dynamic conditions. There are some attempts of modelling the driver as optimal controller and the vehicle in the case of straight line driving, with objective to follow given, frequently variable, vehicle speed.

Key words: vehicle, driver model, road, optimal controller.

RAZVOJ MODELA VOZAČA PRI PRAVOLINIJSKOM KRETANJU VOZILA

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Rezime: Upravljanje vozilom na pravolinijskom putu spada u specijalan slučaj analize dinamičkog sistema Vozač-Vozilo-Okruženje. Podužno kretanje vozila podrazumeva aktivno učešće vozača u uslovima koji su definisani parametrima puta i vozila. U savremenoj literaturi postoje pokušaji modeliranja pomenutog sistema u uslovima pravolinijskog kretanja, ali do sada nije definisan opšte prihvaćen model vozača. Problem se uslozava činjenicom da se u razmatranje mora uzeti u obzir složeno ponašanje motora i transmisije u dinamičkim uslovima. U radu je prikazan pokušaji da se vozač modelira preko optimalnog kontrolera u slučaju upravljanja vozilom pri pravolinijskom kretanju promenljivom brzinom. Zadatak vozača je bio praćenje zadate brzine.

Ključne reči: vozilo, model vozača, put, optimalni kontroler.

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