Table of contents

Volume 315

International Automobile Scientific Forum (IASF-2017) Intelligent Transport Systems

18–19 October 2017, Moscow, Russian Federation

Accepted papers received: 7 February 2018
Published online: 22 February 2018

Preface

International Automobile Scientific Forum (IASF-2017) Intelligent Transport Systems

Peer review statement

Papers

Prospects of development of land driverless trucks

S Bakhmutov, A Saykin, D Endachev, V Evgrafov, A Shagurin, I Kulikov and K Fedoseev.....1

Development, modeling and research of the system of automatic control and equalization of the charge state of a battery pack of a hybrid engine of a vehicle

S Bakhmutov, Y Sizov and M Kim.....9

Creation of operation algorithms for combined operation of anti-lock braking system (ABS) and electric machine included in the combined power plant

S V Bakhmutov, V G Ivanov, K E Karpukhin and A A Umnitsyn.....15

Modeling of the motion of automobile elastic wheel in real-time for creation of wheeled vehicles motion control electronic systems

E V Balakina, N M Zotov and A P Fedin....24
System analysis of vehicle active safety problem

S E Buznikov.....31

The problem of the driverless vehicle specified path stability control

S E Buznikov, D V Endachev, D S Elkin and V O Strukov.....38

Application of virtual physical modeling technology for the development of elements of the autonomous (unmanned) vehicles' systems

V Dygalo, M Lyaschenko, G Boyko and L Dygalo.....46

Application of machine learning methods for traffic signs recognition

D V Filatov, K V Ignatev, A V Deviatkin and E V Serykh.....56

Carriageway actual parameters determination system development to form virtual road scene in the authentically recognizable road marking absence and negative obstacle presence

A M Groshev, S M Groshev, A V Tumasov and A D Romanov.....63

Estimation of light commercial vehicles dynamics by means of HIL-testbench simulation

A Groshev, A Tumasov, E Toropov and P Sereda.....69

Development of autonomous vehicles' testing system

A M Ivanov and S S Shadrin.....76

Normative legal regulating of vehicles with a high degree of automation of control: strategy and tactics for implementation in Russia

B V Kisulenko, A V Bocharov and V V Pugachev.....82
Concept of intellectual charging system for electrical and plug-in hybrid vehicles in Russian Federation
A Kolbasov, K Karpukhin, A Terenchenko and I Kavalchuk.....94

Energy efficient motion control of the electric bus on route
G O Kotiev, D O Butarovich and B B Kositsyn.....101

Isolated step-down DC -DC converter for electric vehicles
O V Kukovinets, K M Sidorov and V E Yutt.....112

Development of driver's assistant system of additional visual information of blind areas for Gazelle Next
V Makarov, O Korelin, D Koblyakov, S Kostin and A Komandirov.....119

V G Merzlikin, M O Gutierrez, A R Makarov, A A Bekaev, A V Bystrov and F A Zagumennov.....125

Improvement of ecological characteristics of the hydrogen diesel engine
T Natriashvili, R Kavtaradze and M Glonti.....140

Navigation of the autonomous vehicle reverse movement
M Rachkov and S Petukhov.....147

Methods of monitoring the technical condition of the braking system of an autonomous vehicle during operation
A Revin, V Dygalo, G Boyko, M Lyaschenko and L Dygalo.....154
Mathematical modelling of active safety system functions as tools for development of driverless vehicles
V Ryazantsev, N Mezentsev and A Zakharov.....159

Distributed radar-based monitoring system for intelligent vehicles
A G Ryndyk, A V Myakinkov and S V Shishanov.....165

The mathematical model of dynamic stabilization system for autonomous car
A M Saikin, S E Buznikov, N S Shabanov and D S Elkin.....174

Integration of passive driver-assistance systems with on-board vehicle systems
V V Savchenko and S N Poddubko.....182

The development of ground unmanned vehicles, driver assistance systems and components according to patent publications
A M Saykin, G S Tuktakiev, A V Zhuravlev and E P Zaitseva.....188

Practical implementation of the concept of converted electric vehicle with advanced traction and dynamic performance and environmental safety indicators
K M Sidorov, V E Yutt, A G Grishchenko and T V Golubchik.....196

Increasing the stability of the articulated lorry at braking by locking the fifth wheel coupling
G I Skotnikov, M M Jileykin and A I Komissarov.....205

Mathematical model of rolling an elastic wheel over deformable support base
V N Volskaia, M M Zhileykin and A Y Zakharov.....221
Intelligent systems of the vehicles' suspension

D Yurlin.....233

Comparative analysis of the operation efficiency of the continuous and relay control systems of a multi-axle wheeled vehicle suspension

M M Zhileykin, G O Kotiev and M V Nagatsev.....243

Synthesis of the adaptive continuous system for the multi-axle wheeled vehicle body oscillation damping

M M Zhileykin, G O Kotiev and M V Nagatsev.....251

The impact of electric vehicles on the outlook of future energy system

A Zhuk and E Buzoverov.....261