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Theory Of Ground Vehicles 3rd Edition

This book highlights recent findings in industrial, manufacturing and mechanical engineering, and provides an overview of the state of the art in these fields, mainly in Russia and Eastern Europe. A broad range of topics and issues in modern engineering is discussed, including the dynamics of machines and working processes, friction, wear and lubrication in machines, surface transport

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and technological machines, manufacturing engineering of industrial facilities, materials engineering, metallurgy, control systems and their industrial applications, industrial mechatronics, automation and robotics. The book gathers selected papers presented at the 7th International Conference on Industrial Engineering (ICIE), held in Sochi, Russia, in May 2021. The authors are experts in various fields of engineering, and all papers have been carefully reviewed. Given its scope,

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the book will be of interest to a wide readership, including mechanical and production engineers, lecturers in engineering disciplines, and engineering graduates.

This book is a printed edition of the Special Issue "Forest Operations, Engineering and Management" that was published in Forests Multibody Systems Approach to Vehicle Dynamics aims to bridge a gap between the subject of classical vehicle dynamics and the general-purpose computer-based

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discipline known as multibody systems analysis (MBS). The book begins by describing the emergence of MBS and providing an overview of its role in vehicle design and development. This is followed by separate chapters on the modeling, analysis, and post-processing capabilities of a typical simulation software; the modeling and analysis of the suspension system; tire force and moment generating characteristics and subsequent modeling of these in an MBS simulation; and the modeling and

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assembly of the rest of the vehicle, including the anti-roll bars and steering systems. The final two chapters deal with the simulation output and interpretation of results, and a review of the use of active systems to modify the dynamics in modern passenger cars. This book intended for a wide audience including not only undergraduate, postgraduate and research students working in this area, but also practicing engineers in industry who require a reference text

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dealing with the major relevant areas within the discipline. * Full of practical examples and applications * Uses industry standard ADAMS software based applications * Accompanied by downloadable ADAMS models and data sets available from the companion website that enable readers to explore the material in the book * Guides readers from modelling suspension movement through to full vehicle models able to perform handling manoeuvres

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Fundamental transformations are imminent for the automobile today: propulsion technologies are going to shift from combustion engines to electric motors; cars and roads will soon be as safe and convenient as never before; and traffic will flow increasingly efficient. Many of these advancements are due to innovative information and communication technologies, controls and smart systems, both in the vehicle and at its interfaces with the systems for power

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supply, mobility and data communication. The papers published in this book are selected from the submissions to the 15th International Forum on Advanced Microsystems for Automotive Applications (AMAA 2011) “Smart Systems for Electric, Safe and Networked Mobility”. They cover components, architectures and smart systems enabling the following functionalities: electric driving, safe cars and roads, and connected vehicles. Additional information is available at

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www.amaa.de

ICIE 2018

**Driveline Systems of Ground
Vehicles**

Case Studies in

**Mechatronics - Applications
and Education**

**Intelligent Robotics and
Applications**

**Advances in Mechanism and
Machine Science**

**Selected Contributions from
the Conference “Modern**

**Engineering: Science and
Education”, Saint**

**Petersburg, Russia, June
2019**

Classical vehicle dynamics, which is
the basis for manned ground vehicle

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design, has exhausted its potential for providing novel design concepts to a large degree. At the same time, unmanned ground vehicle (UGV) dynamics is still in its infancy and is currently being developed using general analytical dynamics principles with very little input from actual vehicle dynamics theory. This technical book presents outcomes from the NATO Advanced Study Institute (ASI) ‘ Advanced Autonomous Vehicle Design for Severe Environments ’ , held in Coventry, UK, in July 2014. The ASI provided a platform for world class professionals to meet and discuss leading-edge research, engineering accomplishments and future trends in

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manned and unmanned ground vehicle dynamics, terrain mobility and energy efficiency. The outcomes of this collective effort serve as an analytical foundation for autonomous vehicle design. Topics covered include: historical aspects, pivotal accomplishments and the analysis of future trends in on- and off-road manned and unmanned vehicle dynamics; terramechanics, soil dynamic characteristics, uncertainties and stochastic characteristics of vehicle-environment interaction for agile vehicle dynamics modeling; new methods and techniques in on-line control and learning for vehicle autonomy; fundamentals of agility and severe environments;

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mechatronics and cyber-physics issues of agile vehicle dynamics to design for control, energy harvesting and cyber security; and case studies of agile and inverse vehicle dynamics and vehicle systems design, including optimisation of suspension and driveline systems. The book targets graduate students, who desire to advance further in leading-edge vehicle dynamics topics in manned and unmanned ground vehicles, PhD students continuing their research work and building advanced curricula in academia and industry, and researchers in government agencies and private companies.

This book reports on recent findings and applications relating to structure

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modeling and computation, design methodology, advanced manufacturing, mechanical behavior of materials, fluid mechanics, energy, and heat transfer. Further, it highlights cutting-edge issues in biomechanics and mechanobiology, and describes simulation and intelligent techniques applied to the control of industrial processes. Chapters are based on a selection of original peer-reviewed papers presented at the 5th International Tunisian Congress on Mechanics, COTUME, which was held on March 22 – 24, 2021, from Hammamet, Tunisia, in hybrid format. All in all, the book offers a good balance of fundamental research and industrially relevant applications,

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and an in-depth analysis of the current state of the art and challenges in various subfields of mechanical engineering; it provides researchers and professionals with a timely snapshot and a source of inspiration for future research and collaborations. The three volume set LNAI 7506, LNAI 7507 and LNAI 7508 constitutes the refereed proceedings of the 5th International Conference on Intelligent Robotics and Applications, ICIRA 2012, held in Montreal, Canada, in October 2012. The 197 revised full papers presented were thoroughly reviewed and selected from 271 submissions. They present the state-of-the-art developments in robotics, automation

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and mechatronics. This volume covers the topics of adaptive control systems; automotive systems; estimation and identification; intelligent visual systems; application of differential geometry in robotic mechanisms; unmanned systems technologies and applications; new development on health management, fault diagnosis, and fault-tolerant control; biomechatronics; intelligent control of mechanical and mechatronic systems.

the 10th anniversary of Chinese Journal of Construction Machinery. In order to celebrate the 20th anniversary of the association and the 10th anniversary of the journal, we will hold the following activities this

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year. 1. Continue to convene the fourth International Conference Symposium of 2013 on Construction Machinery and Vehicle Engineering Research Progress. 2. Continue to convene the fifth National Mechanical Engineering Doctoral Forum. This forum will be held in Xuzhou and the time is from August 20 to August 24 in 2013. 3. The highlevel expert forum will be held during Changsha Engineering Machinery Parts Expo. A dialogue will be taken on the issues of industry scientific innovation, accessories, testing and quality among universities, research institutes and enterprises. 4. The celebrations about the 20th anniversary of the association and the

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10th anniversary of the journal will be conducted in Shanghai. The council of the new editorial board and the executive director is convened for summing up the work of the association since it was founded 20 years ago and the work of the journal since it was founded 10 years ago, and planning for the future development. This International Conference is held in the circumstance of international economic crisis and domestic industrial structure adjustment. In the past year, sales market of construction machinery has been subjected to a certain shocks, and the enterprises have encountered a certain difficulties. For the future, however, I believe that such difficulties are

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temporary, and the prospect is bright. The construction machinery is to serve the mining and state infrastructure construction, and for China, along with most countries in the world which are developing countries, the infrastructure construction is still a significant part in the course of development, and the sound infrastructure will promote the development of their economies, even these countries which are in the leading position in economy development also attach great importance to the improvement of infrastructure. Therefore, construction machinery is indispensable and has a rigid demand. Currently, the international

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competition has not been only limited to terrestrial, since the possession of terrestrial was a foregone conclusion, but there will be more

Fundamentals and Ultimate Trends
Dynamics of Vehicles on Roads and Tracks Vol 1

Proceedings of the 7th International Conference on Industrial Engineering (ICIE 2021)

Proceedings Of The 18th Iavsd Symposium Held In Kanagawa, Japan August 24-30, 2003

Volume 6: Vehicle Electronics
Forest Operations, Engineering and Management

The 15th European Conference on Mathematics for Industry was held in the agreeable surroundings of

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University College London, just 5 minutes walk from the British Museum in the heart of London, over the ?ve warm, sunny days from 30 June to 4 July 2008. Participants from all over the world met with the commonaimofreinforcingthe roleofmathematics asanoverarching resource for industry and business. The conference attracted over 300 participants from 30 countries, most of them participating with either a contributed talk, a minisymposium pres- tation or a plenary lecture. 'Mathematics in Industry' was interpreted in its widest sense as can be seen from the range of applications and techniques described in this volume. We mention just two examples. The Alan Taylor Lecture was given by Mario Primicerio on a problem arising from moving oil

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through pipelines when temperature variations affect the shearing properties of wax and thus modify the flow. The Wacker Prize winner, Master's student Lauri Harhanen from the Helsinki University of Technology, showed how a novel piece of mathematics allowed new software to capture real-time images of teeth from the data supplied by present day dental machinery (see ECMI Newsletter 44). The meeting was attended by leading figures from government, business and science who all shared the same aim – to promote the application of innovative mathematics to industry, and identify industrial sectors that offer the most exciting opportunities for mathematicians to provide new insight and new ideas.

This book highlights recent findings in

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industrial, manufacturing and mechanical engineering, and provides an overview of the state of the art in these fields, mainly in Russia and Eastern Europe. A broad range of topics and issues in modern engineering are discussed, including the dynamics of machines and working processes, friction, wear and lubrication in machines, surface transport and technological machines, manufacturing engineering of industrial facilities, materials engineering, metallurgy, control systems and their industrial applications, industrial mechatronics, automation and robotics. The book gathers selected papers presented at the 4th International Conference on Industrial Engineering (ICIE), held in Moscow, Russia in May 2018. The authors are experts in various fields of

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engineering, and all papers have been carefully reviewed. Given its scope, the book will be of interest to a wide readership, including mechanical and production engineers, lecturers in engineering disciplines, and engineering graduates.

The International Symposium on Dynamics of Vehicles on Roads and Tracks is the leading international gathering of scientists and engineers from academia and industry in the field of ground vehicle dynamics to present and exchange their latest innovations and breakthroughs. Established in Vienna in 1977, the International Association of Vehicle System Dynamics (IAVSD) has since held its biennial symposia throughout Europe and in the USA, Canada, Japan, South Africa and China. The main objectives of IAVSD are to promote the

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development of the science of vehicle dynamics and to encourage engineering applications of this field of science, to inform scientists and engineers on the current state-of-the-art in the field of vehicle dynamics and to broaden contacts among persons and organisations of the various countries engaged in scientific research and development in the field of vehicle dynamics and related areas. IAVSD 2017, the 25th Symposium of the International Association of Vehicle System Dynamics was hosted by the Centre for Railway Engineering at Central Queensland University, Rockhampton, Australia in August 2017. The symposium focused on the following topics related to road and rail vehicles and trains: dynamics and stability; vibration and comfort; suspension; steering; traction and

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braking; active safety systems; advanced driver assistance systems; autonomous road and rail vehicles; adhesion and friction; wheel-rail contact; tyre-road interaction; aerodynamics and crosswind; pantograph-catenary dynamics; modelling and simulation; driver-vehicle interaction; field and laboratory testing; vehicle control and mechatronics; performance and optimization; instrumentation and condition monitoring; and environmental considerations.

Providing a comprehensive review of the latest innovative developments and practical applications in road and rail vehicle dynamics, the 213 papers now published in these proceedings will contribute greatly to a better understanding of related problems and will serve as a reference for

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researchers and engineers active in this specialised field.

This proceedings brings together 59 selected articles presented at the joint conferences of the International Conference on Management, Information and Communication (ICMIC2016) and the International Conference on Optics and Electronics Engineering (ICOEE2016), which were held in Guilin, China, during May 28–29, 2016. ICMIC2016 and ICOEE2016 provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their latest findings and results in the development in Information Management, Communication, Optics and Electronics host by ICMIC2016 and ICOEE2016. The proceedings collected the latest research results

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and applications in the related areas. We hope to enlighten readers with some latest developments in Information Management, and Optics Electronics presented at the joint conferences.

Proceedings of the FISITA 2012 World Automotive Congress

Research Methods and Solutions to Current Transport Problems

Proceedings of the 25th International Symposium on Dynamics of Vehicles on Roads and Tracks (IAVSD 2017), 14-18 August 2017, Rockhampton, Queensland, Australia

Management Information And

Optoelectronic Engineering -

Proceedings Of The 2016 International Conference

Advances in Mechanical Engineering and Mechanics II

Progress in Industrial Mathematics at

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ECMI 2008

Hardbound. The computer-aided methods presented in this book represent recent advances in the methodology for predicting and evaluating off-road vehicle performance. The mathematical models established for vehicle-terrain systems will enable the engineering practitioner to evaluate, on a rational basis, a wide range of options and to select an appropriate vehicle configuration for a given mission and environment. The models take into account all major design and operational parameters, as well as pertinent terrain characteristics. Applications of the computer-aided engineering methods to the parametric analysis of off-road vehicle design are demonstrated through examples.

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*"With this book, Prof. Dr. Vantsevich brings a tremendous contribution to the field of Automotive Transmission and Driveline Engineering, including his innovative methods for optimum driveline synthesis, as well as his experience with the development of various hardware solutions, from the basic limited slip differentials to the most sophisticated mechatronic systems." —Dr.-Ing. Mircea Gradu
Director, Transmission and Driveline Engineering Head, Virtual Analysis Tools Chrysler Group LLC*

Now that vehicles with four and more driving wheels are firmly ensconced in the consumer market, they must provide energy/fuel-saving benefits and improved operational quality including terrain mobility, traction and velocity properties, turnability, and stability of motion. A first-of-its-

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kind resource, Driveline Systems of Ground Vehicles: Theory and Design presents a comprehensive and analytical treatment of driveline research, design, and tests based on energy efficiency, vehicle dynamics, and operational properties requirements. This volume addresses fundamental engineering problems including how to investigate the effect of different driveline systems on the properties of vehicles and how to determined the optimal characteristics of the driveline system and its power-dividing units (PDUs) and design it for a specific vehicle to ensure high level of vehicle dynamics, energy efficiency, and performance. The authors develop an analytical apparatus for math modeling of driveline systems that can be compiled from different

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types of PDUs. They also introduce methodologies for the synthesis of optimal characteristics of PDUs for different types of vehicles.

Structured to be useful to engineers of all levels of experience, university professors and graduate students, the book is based on the R&D projects conducted by the authors. It explores intriguing engineering dilemmas such as how to achieve higher energy and fuel efficiency by driving either all the wheels or not all the wheels, solve oversteering issues by managing wheel power distribution, and many other technical problems.

This book includes the proceedings of the 19th International Scientific Conference "Energy Management of Municipal Transportation Facilities and Transport EMMFT 2017", which

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was held in Khabarovsk, Russia on 10-13 April 2017. The book presents the research findings of scientists working at universities in the Far Eastern, Siberian and Ural Federal Districts of Russia, and of Serbia, which are unique regions notable for sustainably operating complex transport infrastructures in severe climatic and geographic environments. It also offers practical insights into transportation operation under such conditions. The book discusses the experiences of colleagues from Slovenia, Ukraine and Latvia in the development of transport infrastructure and construction of transport facilities and features and includes the results of a wide range of studies, such as managing multimodal transportation, improving the efficiency of

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locomotives, electric locomotives, traction substations, electrical substations, relay protection and automation devices, and power-factor correction units. It addresses topics like renewable energy sources, problems of the mathematical and simulation modelling of electromagnetic processes of electrical power objects and systems, aspects of cost reduction for fuel-and-power resources, theoretical aspects of energy management, development of transport infrastructure, modern organizational and technological solutions in construction, new approaches in the field of management, analysis and monitoring in transport sector. Comprising 142 high-quality articles covering a wide range of

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topics, these proceedings are of interest to anyone engaged in transport engineering, electric power systems, energy management, construction and operation of transport infrastructure buildings and facilities.

This book draws together the most interesting recent results to emerge in mechanical engineering in Russia, providing a fascinating overview of the state of the art in the field in that country which will be of interest to a wide readership. A broad range of topics and issues in modern engineering are discussed, including dynamics of machines, materials engineering, structural strength and tribological behavior, transport technologies, machinery quality and innovations. The book comprises selected papers presented at the 8th

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conference "Modern Engineering: Science and Education", held at the Saint Petersburg State Polytechnic University in May 2019 with the support of the Russian Engineering Union. The authors are experts in various fields of engineering, and all of the papers have been carefully reviewed. The book will be of interest to mechanical engineers, lecturers in engineering disciplines and engineering graduates.

AC Motor Control and Electrical Vehicle Applications

CONAT 2016 International Congress of Automotive and Transport Engineering

Theory of Ground Vehicles

Green, Smart and Connected Transportation Systems

Dynamics of Vehicles on Roads and Tracks

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Proceedings of the International Scientific Conference Transport of the 21st Century, 9- 12th of June 2019, Ryn, Poland

An updated edition of the classic reference on the dynamics of road and off-road vehicles As we enter a new millennium, the vehicle industry faces greater challenges than ever before as it strives to meet the increasing demand for safer, environmentally friendlier, more energy efficient, and lower emissions products. Theory of Ground Vehicles, Third Edition gives aspiring and practicing engineers a fundamental understanding of the critical factors affecting the performance,

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handling, and ride essential to the development and design of ground vehicles that meet these requirements. As in previous editions, this book focuses on applying engineering principles to the analysis of vehicle behavior. A large number of practical examples and problems are included throughout to help readers bridge the gap between theory and practice. Covering a wide range of topics concerning the dynamics of road and off-road vehicles, this Third Edition is filled with up-to-date information, including:

- * The Magic Formula for characterizing pneumatic

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*tire behavior from test data for vehicle handling simulations * Computer-aided methods for performance and design evaluation of off-road vehicles, based on the author's own research **

*Updated data on road vehicle transmissions and operating fuel economy * Fundamentals of road vehicle stability control * Optimization of the performance of four-wheel-drive off-road vehicles and experimental substantiation, based on the author's own investigations * A new theory on skid-steering of tracked vehicles, developed by the author.*

These lecture notes present

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selected topics concerning a wide range of electrical and electronics applications, highlighting innovative approaches and offering state-of-the-art overviews. The book is divided into 14 topical areas, including e.g. telecommunication, power systems, robotics, control systems, renewable energy, mechanical engineering, computer science and more. Readers will find revealing papers on the design and implementation of control algorithms for automobiles and electrohydraulic systems, efficient protocols for vehicular ad hoc networks and motor control,

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and energy-saving methods that can be applied in various fields of electrical engineering. The book offers a valuable resource for all practitioners who want to apply the topics discussed to solve real-world problems in their challenging applications. Offering insights into common and related subjects in the research fields of modern electrical, electronic and related technologies, it will also benefit all scientists and engineers working in the above-mentioned fields.

The International Symposium on Dynamics of Vehicles on Roads and Tracks is the

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leading international gathering of scientists and engineers from academia and industry in the field of ground vehicle dynamics to present and exchange their latest innovations and breakthroughs. Established in Vienna in 1977, the International Association of Vehicle System Dynamics (IAVSD) has since held its biennial symposia throughout Europe and in the USA, Canada, Japan, South Africa and China. The main objectives of IAVSD are to promote the development of the science of vehicle dynamics and to encourage engineering applications of this field of science, to

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inform scientists and engineers on the current state-of-the-art in the field of vehicle dynamics and to broaden contacts among persons and organisations of the various countries engaged in scientific research and development in the field of vehicle dynamics and related areas. IAVSD 2017, the 25th Symposium of the International Association of Vehicle System Dynamics was hosted by the Centre for Railway Engineering at Central Queensland University, Rockhampton, Australia in August 2017. The symposium focused on the following topics related to

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road and rail vehicles and trains; dynamics and stability; vibration and comfort; suspension; steering; traction and braking; active safety systems; advanced driver assistance systems; autonomous road and rail vehicles; adhesion and friction; wheel-rail contact; tyre-road interaction; aerodynamics and crosswind; pantograph-catenary dynamics; modelling and simulation; driver-vehicle interaction; field and laboratory testing; vehicle control and mechatronics; performance and optimization; instrumentation and

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condition monitoring; and environmental considerations. Providing a comprehensive review of the latest innovative developments and practical applications in road and rail vehicle dynamics, the 213 papers now published in these proceedings will contribute greatly to a better understanding of related problems and will serve as a reference for researchers and engineers active in this specialised field. Volume 1 contains 78 papers under the subject heading Road. The powertrain is at the heart of vehicle design; the engine - whether it is a

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conventional, hybrid or electric design - provides the motive power, which is then managed and controlled through the transmission and final drive components. The overall powertrain system therefore defines the dynamic performance and character of the vehicle. The design of the powertrain has conventionally been tackled by analyzing each of the subsystems individually and the individual components, for example, engine, transmission and driveline have received considerable attention in textbooks over the past decades. The key theme of this book is to take a

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systems approach - to look at the integration of the components so that the whole powertrain system meets the demands of overall energy efficiency and good drivability. Vehicle Powertrain Systems provides a thorough description and analysis of all the powertrain components and then treats them together so that the overall performance of the vehicle can be understood and calculated. The text is well supported by practical problems and worked examples. Extensive use is made of the MATLAB(R) software and many example programmes for vehicle calculations are provided in

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*the text. Key features:
Structured approach to explaining the fundamentals of powertrain engineering
Integration of powertrain components into overall vehicle design
Emphasis on practical vehicle design issues
Extensive use of practical problems and worked examples
Provision of MATLAB(R) programmes for the reader to use in vehicle performance calculations
This comprehensive and integrated analysis of vehicle powertrain engineering provides an invaluable resource for undergraduate and postgraduate automotive engineering students and is*

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a useful reference for practicing engineers in the vehicle industry

AETA 2016: Recent Advances in Electrical Engineering and Related Sciences

Advanced Autonomous Vehicle Design for Severe Environments

Volume I

Recent Advances in Information Systems and Technologies

Vehicle Dynamics

Proceedings of the 15th IFToMM World Congress on Mechanism and Machine Science

This book highlights recent findings in industrial, manufacturing and mechanical engineering, and provides an

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overview of the state of the art in these fields, mainly in Russia and Eastern Europe. A broad range of topics and issues in modern engineering are discussed, including the dynamics of machines and working processes, friction, wear and lubrication in machines, surface transport and technological machines, manufacturing engineering of industrial facilities, materials engineering, metallurgy, control systems and their industrial applications, industrial mechatronics, automation and robotics. The book gathers selected papers presented at the 5th International Conference on Industrial Engineering (ICIE), held in Sochi, Russia in March 2019. The authors are experts in

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various fields of engineering, and all papers have been carefully reviewed. Given its scope, the book will be of interest to a wide readership, including mechanical and production engineers, lecturers in engineering disciplines, and engineering graduates.

This book gathers the proceedings of the 15th IFToMM World Congress, which was held in Krakow, Poland, from June 30 to July 4, 2019. Having been organized every four years since 1965, the Congress represents the world's largest scientific event on mechanism and machine science (MMS). The contributions cover an extremely diverse range of topics, including biomechanical engineering,

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computational kinematics, design methodologies, dynamics of machinery, multibody dynamics, gearing and transmissions, history of MMS, linkage and mechanical controls, robotics and mechatronics, micro-mechanisms, reliability of machines and mechanisms, rotor dynamics, standardization of terminology, sustainable energy systems, transportation machinery, tribology and vibration. Selected by means of a rigorous international peer-review process, they highlight numerous exciting advances and ideas that will spur novel research directions and foster new multidisciplinary collaborations.

The book on Sustainable Automotive Technologies aims to

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draw special attention to the research and practice focused on new technologies and approaches capable of meeting the challenges to sustainable mobility. In particular, the book features incremental and radical technical advancements that are able to meet social, economic and environmental targets in both local and global contexts. These include original solutions to the problems of pollution and congestion, vehicle and public safety, sustainable vehicle design and manufacture, new structures and materials, new power-train technologies and vehicle concepts. In addition to vehicle technologies, the book is also concerned with the broader systemic issues such as

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sustainable supply chain systems, integrated logistics and telematics, and end-of-life vehicle management. It captures selected peer reviewed papers accepted for presentation at the 4th International Conference on Sustainable Automotive Technologies, ICSAT2012, held at the RMIT, Melbourne, Australia. The volume will include selected and reviewed papers from CONAT - International Congress of Automotive and Transport Engineering to be held in Brasov, Romania, in October 2016. Authors are experts from research, industry and universities coming from 14 countries worldwide. The papers are covering the latest developments in automotive

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vehicles and environment, advanced transport systems and road traffic, heavy and special vehicles, new materials, manufacturing technologies and logistics, accident research and analysis and innovative solutions for automotive vehicles. The conference will be organized by SIAR (Society of Automotive Engineers from Romania) in cooperation with FISITA. Proceedings of the 13th International Conference on Climbing and Walking Robots and the Support Technologies for Mobile Machines : 31 August-3 September 2010, Nagoya Institute of Technology, Japan Advances in Visual Computing Smart Systems for Electric, Safe and Networked Mobility

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5th International Conference, ICIRA 2012, Montreal, Canada, October 3-5, 2012, Proceedings, Part I

The Dynamics of Vehicles on Roads and on Tracks Supplement to Vehicle System Dynamics International Scientific Conference Energy Management of Municipal Transportation Facilities and Transport EMMFT 2017

This book presents a selection of papers from the 2017 World Conference on Information Systems and Technologies (WorldCIST'17), held between the 11st and

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13th of April 2017 at Porto Santo Island, Madeira, Portugal. WorldCIST is a global forum for researchers and practitioners to present and discuss recent results and innovations, current trends, professional experiences and challenges involved in modern Information Systems and Technologies research, together with technological developments and applications. The main topics covered are:

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**Information and
Knowledge Management;
Organizational Models
and Information Systems;
Software and Systems
Modeling; Software
Systems, Architectures,
Applications and Tools;
Multimedia Systems and
Applications; Computer
Networks, Mobility and
Pervasive Systems;
Intelligent and Decision
Support Systems; Big
Data Analytics and
Applications;
Human–Computer
Interaction; Ethics,
Computers & Security;**

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**Health Informatics;
Information Technologies
in Education; and
Information Technologies
in Radiocommunications.
These proceedings gather
selected papers from the
9th International
Conference on Green
Intelligent
Transportation Systems
and Safety, held in
Guilin, China on July
1-3, 2018. They feature
cutting-edge studies on
Green Intelligent
Mobility Systems, the
guiding motto being to
achieve “green,**

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intelligent, and safe transportation systems.” The contributions presented here can help promote the development of green mobility and intelligent transportation technologies to improve interconnectivity, resource sharing, flexibility and efficiency. Given its scope, the book will benefit researchers and engineers in the fields of Transportation Technology and Traffic Engineering, Automotive

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**and Mechanical
Engineering, Industrial
and System Engineering,
and Electrical
Engineering alike.
These proceedings
capture papers presented
at the third
International
Conferences on
Sustainable Automotive
Technologies (ICSAT),
held at the Clemson
University International
Center for Automotive
Research (CU-ICAR),
Greenville, South
Carolina, USA, during
5-6 April 2011. ICSAT is**

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the state-of-the-art conference in the field of new technologies for transportation. The book summarizes all important trends in sustainability of automotive development today with a special focus on materials, propulsion technologies as well as manufacturing issues. It provides a brief selection of papers and key-note speakers of the conference. Papers from the US, Australia, Europe and Asia are showing the lighthouse

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character of the conference, in a field which gains more and more importance as far as emissions and the lack of fossil fuels in the future are concerned. The book provides a very good overview of R&D activities at OEMs as well as in leading universities and laboratories; the special focus is on new ideas for sustainable mobility. The book is dedicated as an auxiliary literature

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for academic staff of universities, research institutes, as well as for students of transport teaching. The aim of the conference was to present the achievements of national and foreign research and scientific centers dealing with the issues of rail, road, air and sea transport in technical and technological aspects, as well as organization and integration of the environment conducting research and education

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in the discipline of civil engineering and transport. International Scientific Conference Transport of the 21st Century was held in Ryn, Poland, in the 9th–12th of June 2019. The research areas of the conference were as follows: • transport infrastructure and communication engineering, • construction and operation of means of transport, • logistics engineering and transport technology, •

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organization and planning of transport, including public transport, • traffic control systems in transport, • transport telematics and intelligent transportation systems, • smart city and electromobility, • safety engineering and ecology in transport, • automation of means of transport. It also used by specialists from central and local government authorities in the area of deepening

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knowledge of modern
technologies and
solutions used for
planning, managing and
operating transport.
Sustainable Automotive
Technologies 2011
Sustainable Automotive
Technologies 2012
Proceedings of the 5th
International Conference
on Industrial
Engineering (ICIE 2019)
Advanced Motion Control
and Sensing for
Intelligent Vehicles
Emerging Trends in
Mobile Robotics
Proceedings of the 2013

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International Conference on Advances in Construction Machinery and Vehicle Engineering

Mechatronics in Action's case-study approach provides the most effective means of illustrating how mechatronics can make products and systems more flexible, more responsive and possess higher levels of functionality than would otherwise be possible. The series of case studies serves to illustrate how a

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mechatronic approach has been used to achieve enhanced performance through the transfer of functionality from the mechanical domain to electronics and software. Mechatronics in Action not only provides readers with access to a range of case studies, and the experts' view of these, but also offers case studies in course design and development to support tutors in making the best and most effective use of the

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technical coverage provided. It provides, in an easily accessible form, a means of increasing the understanding of the mechatronic concept, while giving both students and tutors substantial technical insight into how this concept has been developed and used. In this book, the author deals with the mathematical modelling, nonlinear control and performance evaluation of a conceptual anti-

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aircraft gun based mobile air defence system engaging an attacking three-dimensional aerial target. This book is of interest to academic faculty, graduate students and industry professionals working in the fields of mathematical modelling and control, ground vehicles, mobile air defence systems and other related topics. This textbook is appropriate for senior undergraduate and first

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year graduate students in mechanical and automotive engineering. The contents in this book are presented at a theoretical-practical level. It explains vehicle dynamics concepts in detail, concentrating on their practical use. Related theorems and formal proofs are provided, as are real-life applications. Students, researchers and practicing engineers alike will appreciate the user-friendly

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presentation of a wealth of topics, most notably steering, handling, ride, and related components. This book also: Illustrates all key concepts with examples Includes exercises for each chapter Covers front, rear, and four wheel steering systems, as well as the advantages and disadvantages of different steering schemes Includes an emphasis on design throughout the text, which provides a

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practical, hands-on approach

The two volume set LNCS 6938 and LNCS 6939 constitutes the refereed proceedings of the 7th International Symposium on Visual Computing, ISVC 2011, held in Las Vegas, NV, USA, in September 2011. The 68 revised full papers and 46 poster papers presented together with 30 papers in the special tracks were carefully reviewed and selected from more than 240 submissions. The papers

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of part I (LNCS 6938) are organized in computational bioimaging, computer graphics, motion and tracking, segmentation, visualization; mapping modeling and surface reconstruction, biomedical imaging, computer graphics, interactive visualization in novel and heterogeneous display environments, object detection and recognition. Part II (LNCS 6939) comprises topics such as immersive

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visualization, applications, object detection and recognition, virtual reality, and best practices in teaching visual computing.

Automotive Chassis Engineering

Proceedings of the 3rd International Conference Mathematical Modelling, Nonlinear Control and Performance Evaluation of a Ground Based Mobile Air Defence System

Mechatronics in Action
Advances in Mechanical Engineering

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Proceedings of the 4th International Conference

This book provides a comprehensive account of stochastic filtering as a modeling tool in finance and economics. It aims to present this very important tool with a view to making it more popular among researchers in the disciplines of finance and economics. It is not intended to give a complete mathematical treatment of different stochastic filtering approaches, but rather to describe them in simple terms and illustrate their application with real historical data for problems normally encountered in these disciplines. Beyond laying out the steps to be implemented, the

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steps are demonstrated in the context of different market segments. Although no prior knowledge in this area is required, the reader is expected to have knowledge of probability theory as well as a general mathematical aptitude. Its simple presentation of complex algorithms required to solve modeling problems in increasingly sophisticated financial markets makes this book particularly valuable as a reference for graduate students and researchers interested in the field. Furthermore, it analyses the model estimation results in the context of the market and contrasts these with contemporary research publications. It is also suitable for

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use as a text for graduate level courses on stochastic modeling. Proceedings of the FISITA 2012 World Automotive Congress are selected from nearly 2,000 papers submitted to the 34th FISITA World Automotive Congress, which is held by Society of Automotive Engineers of China (SAE-China) and the International Federation of Automotive Engineering Societies (FISITA). This proceedings focus on solutions for sustainable mobility in all areas of passenger car, truck and bus transportation. Volume 6: Vehicle Electronics focuses on:

- Engine/Chassis/Body Electronic Control
- Electrical and Electronic System
- Software and Hardware

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Development • Electromagnetic Compatibility (EMC) • Vehicle Sensor and Actuator • In-Vehicle Network • Multi-Media/Infotainment System

Above all researchers, professional engineers and graduates in fields of automotive engineering, mechanical engineering and electronic engineering will benefit from this book. SAE-China is a national academic organization composed of enterprises and professionals who focus on research, design and education in the fields of automotive and related industries. FISITA is the umbrella organization for the national automotive societies in 37 countries around the world. It was

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founded in Paris in 1948 with the purpose of bringing engineers from around the world together in a spirit of cooperation to share ideas and advance the technological development of the automobile.

Written for students and practicing engineers working in automotive engineering, this book provides a fundamental yet comprehensive understanding of chassis systems and requires little prior knowledge on the part of the reader. It presents the material in a practical and realistic manner, using reverse engineering as a basis for examples to reinforce understanding of the topics. The specifications and characteristics

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of vehicles currently on the market are used to exemplify the theory ' s application, and care is taken to connect the various topics covered, so as to clearly demonstrate their interrelationships. The book opens with a chapter on basic vehicle mechanics, which include the forces acting on a vehicle in motion, assuming a rigid body. It then proceeds to a chapter on steering systems, which provides readers with a firm understanding of the principles and forces involved under static and dynamic loading. The next chapter focuses on vehicle dynamics by considering suspension systems—tyres, linkages, springs,

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dampers etc. The chapter on chassis structures and materials includes analysis tools (typically, finite element analysis) and design features that are used to reduce mass and increase occupant safety in modern vehicles. The final chapter on Noise, Vibration and Harshness (NVH) includes a basic overview of acoustic and vibration theory and makes use of extensive research investigations and practical experience as a means of addressing NVH issues. In all subject areas the authors take into account the latest trends, anticipating the move towards electric vehicles, on-board diagnostic monitoring, active systems and performance

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optimisation. The book features a number of worked examples and case studies based on recent research projects. All students, including those on Master ' s level degree courses in Automotive Engineering, and professionals in industry who want to gain a better understanding of vehicle chassis engineering, will benefit from this book.

Technology/Engineering/Automotive Engineering for advancing ground vehicle mobility A standard text and reference for both the educational and professional communities, Theory of Ground Vehicles gives aspiring and practicing engineers a fundamental understanding of the

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critical factors affecting the performance, handling, and ride essential to the development and design of ground vehicles. In view of the growing concerns over environmental impact, energy efficiency, and safety, this new Fourth Edition has been revised and expanded to address these issues and other developments in the field. Retaining the contents and format of previous editions, the Fourth Edition introduces new material to reflect recent advances in ground transportation technology, including:

- * Computer-aided methods for design and performance evaluation of off-road vehicles and their practical applications
- * Emissions and fuel

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economy * Hybrid electric drives and fuel cells and their operating principles * Selection of vehicle configurations for off-road operations * Road vehicle stability control * ISO 2631-1:1997 and its applications to evaluating vehicle ride characteristics As in previous editions, this book focuses on applying engineering principles to the analysis of vehicle behavior. A large number of practical examples and problems are included throughout to help readers bridge the gap between theory and practice. With its broad coverage and pedagogical aids, Theory of Ground Vehicles, Fourth Edition remains the text of choice for students, engineers, and

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researchers wishing to master and apply basic theory to solve real-world, road and off-road vehicle mobility problems.

Selected Papers from the 5th Tunisian Congress on Mechanics, CoTuMe 2021, March 22–24, 2021
Advanced Microsystems for Automotive Applications 2011
7th International Symposium, ISVC 2011, Las Vegas, NV, USA, September 26-28, 2011.
Proceedings, Part I

Vehicle Powertrain Systems
Multibody Systems Approach to Vehicle Dynamics

This book provides the latest information in intelligent vehicle control and intelligent

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transportation. Detailed discussions of vehicle dynamics and ground-vehicle interactions are provided for the modeling, simulation and control of vehicles. It includes an extensive review of past and current research achievements in the intelligent vehicle motion control and sensory field, and the book provides a careful assessment of future developments. Motor control technology continues to play a vital role in the initiative to eliminate or at least decrease petroleum dependency and greenhouse gas emissions around the

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world. Increased motor efficiency is a crucial aspect of this science in the global transition to clean power use in areas such as industrial applications and home appliances—but particularly in the design of vehicles.

Summarizes the evolution of motor driving units toward high efficiency, low cost, high power density, and flexible interface with other components AC Motor Control and Electric Vehicle

Applications addresses the topics mentioned in its title but also elaborates on motor design perspective, such as

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back EMF harmonics, loss, flux saturation, and reluctance torque, etc. Maintaining theoretical integrity in AC motor modeling and control throughout, the author focuses on the benefits and simplicity of the rotor field-oriented control, describing the basics of PWM, inverter, and sensors. He also clarifies the fundamentals of electric vehicles and their associated dynamics, motor issues, and battery limits. A powerful compendium of practical information, this book serves as an overall useful tool for the design and control of high-

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efficiency motors.

The 18th Symposium of the International Association for Vehicle System Dynamics was held at Kanagawa Institute of Technology, Atsugi, Kanagawa, Japan. The symposium was hosted by KAIT as one of the memorial events of the 40th anniversary of KAIT. Though overwhelming numbers of high quality papers were applied in response to the call for papers for the presentation at the symposium, the Scientific Committee accepted 89 papers for the oral presentation and 38 for the poster presentation.

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Finally, 82 papers were presented at the oral sessions and 29 papers at the poster sessions in the symposium. There were five States-of-the-Arts papers presented at the plenary sessions in the symposium.

Terramechanics and Off-road Vehicles

Proceedings of the 9th International Conference on Green Intelligent Transportation Systems and Safety

Proceedings of the 4th International Conference on Industrial Engineering Theory and Design

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Theory and Application ***Volume 1***