

# Aerodynamic Loads In A Full Vehicle Nvh Analysis

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**International Journal of Vehicle Design** - 1997

**Cumulative Index [of The] SAE Papers** - Society of Automotive Engineers 1965

**Noise, Vibration and Harshness of Electric and Hybrid Vehicles** - Lijun Zhang 2020-12-29

The noise, vibration, and harshness (NVH), also known as noise and vibration (N&V), is a critical feature for customers to assess the performance and quality of vehicles. NVH characteristics are higher among factors that customers use to judge the vehicle's quality. This book sets out to introduce the basic concepts, principles, and applications of the NVH development and refinement of Battery Electric Vehicles (BEV), Hybrid Electric Vehicles (HEV), and Fuel Cell Electric Vehicles. Each type comes with its own set of challenges.

**Mechanical Vibration** - Haym Benaroya 2017-08-29

**Mechanical Vibration: Analysis, Uncertainties, and Control**, Fourth Edition addresses the principles and application of vibration theory. Equations for modeling vibrating systems are explained, and MATLAB® is referenced as an analysis tool. The Fourth Edition adds more coverage of damping, new case studies, and development of the control aspects in vibration analysis. A MATLAB appendix has also been added to help students with computational analysis. This work includes example problems and explanatory figures, biographies of renowned contributors, and access to a website providing supplementary resources.

**Aerodynamics of Road Vehicles** - Wolf-Heinrich Hucho 2013-10-22

**Aerodynamics of Road Vehicles** details the aerodynamics of passenger cars, commercial vehicles, sports cars, and race cars; their external flow field; as well as their internal flow field. The book, after giving an introduction to automobile aerodynamics and some fundamentals of fluid mechanics, covers topics such as the performance and aerodynamics of different kinds of vehicles, as well as test techniques for their aerodynamics. The book also covers other concepts related to automobiles such as cooling systems and ventilations for vehicles. The text is recommended for mechanical engineers and physicists in the automobile industry who would like to understand more about aerodynamics of motor vehicles and its importance on the field of road safety and automobile production.

**Vehicle Noise and Vibration Refinement** - Xu Wang 2010-03-12

High standards of noise, vibration and harshness (NVH) performance are expected in vehicle design. Refinement is therefore one of the main engineering/design attributes to be addressed when developing new vehicle models and components. Vehicle noise and vibration refinement provides a review of noise and vibration refinement principles, methods, advanced experimental and modelling techniques and palliative treatments necessary in the process of vehicle design, development and integration in order to meet noise and vibration standards. Case studies from the collective experience of specialists working for major automotive companies

are included to form an important reference for engineers practising in the motor industry who seek to overcome the technological challenges faced in developing quieter, more comfortable cars. The reader will be able to develop an in-depth knowledge of the source and transmission mechanisms of noise and vibration in motor vehicles, and a clear understanding of vehicle refinement issues that directly influence a customer's purchasing decision. Reviews noise and vibration refinement principles, methods and modelling techniques necessary in vehicle design, development and integration in order to meet noise and vibration standards Outlines objectives driving development and the significance of vehicle noise and vibration refinement whilst documenting definitions of key terms for use in practice Case studies demonstrate measurement and modelling in industry and illustrate key testing methods including hand sensing and environmental testing *International Aerospace Abstracts* - 1994

**12th International Munich Chassis Symposium 2021** - Peter Pfeffer 2022-04-18

The increasing automation of driving functions and the electrification of powertrains present new challenges for the chassis with regard to complexity, redundancy, data security, and installation space. At the same time, the mobility of the future will also require entirely new vehicle concepts, particularly in urban areas. The intelligent chassis must be connected, electrified, and automated in order to be best prepared for this future. Contents Driving Simulators.- Innovative Chassis Systems.- Automated Driving and Racing.- New Methods and Systems.- Suspension and Ride Comfort.- All-Wheel Steering.- Future Brake Systems and Testing Technology.- Innovations in Tires and Wheels. Target audiences Automotive engineers and chassis specialists as well as students looking for state-of-the-art information regarding their field of activity - Lecturers and instructors at universities and universities of applied sciences with the main subject of automotive engineering - Experts, researchers and development engineers of the automotive and the supplying industry. Publisher ATZ live stands for top quality and a high level of specialist information and is part of Springer Nature, one of the leading publishing groups worldwide for scientific, educational and specialist literature. Partner TÜV SÜD is an international leading technical service organisation catering to the industry, mobility and certification segment.

**Towards Sustainable Road Transport** - Ronald M. Dell 2014-06-11

Increasing pressure on global reserves of petroleum at a time of growing demand for personal transport in developing countries, together with concerns over atmospheric pollution and carbon dioxide emissions, are leading to a requirement for more sustainable forms of road transport. Major improvements in the efficiency of all types of road vehicles are called for, along with the use of fuels derived from alternative sources, or entirely new fuels. *Towards Sustainable Road Transport* first describes the evolution of vehicle designs and propulsion technologies over the past two centuries,

before looking forward to possible new forms of energy to substitute for petroleum. The book also discusses the political and socio-economic drivers for change, investigates barriers to their broad implementation, and outlines the state-of-the-art of candidate power sources, advanced vehicle design, and associated infrastructure. The comprehensive technical information supplied by an expert author team ensures that *Towards Sustainable Road Transport* will provide readers with a clear understanding of the ongoing progress in this field and the challenges still to be faced. Drivers of technological change in road transport and the infrastructure requirements Discussion of alternative fuels for internal combustion engines and fuel conversion technologies Detailed exploration of current and emerging options for vehicle propulsion, with emphasis on hybrid/ battery electric traction, hydrogen, and fuel cells Comparative analysis of vehicle design requirements, primary power source efficiency, and energy storage systems

**Annual Index/abstracts of SAE Technical Papers - 2007**

**CAE - PROCESS AND NETWORK : A Methodology for Continuous Product Validation Process Based on Network of Various Digital Simulation Methods - Gagan Syal 2014-07-30**

*Racecar Engineering - 2008*

**Technical Literature Abstracts - Society of Automotive Engineers 2000**

**International Gear Conference 2014: 26th-28th August 2014, Lyon - Philippe Vexlex 2014-09-18**

This book presents papers from the International Gear Conference 2014, held in Lyon, 26th-28th August 2014. Mechanical transmission components such as gears, rolling element bearings, CVTs, belts and chains are present in every industrial sector and over recent years, increasing competitive pressure and environmental concerns have provided an impetus for cleaner, more efficient and quieter units. Moreover, the emergence of relatively new applications such as wind turbines, hybrid transmissions and jet engines has led to even more severe constraints. The main objective of this conference is to provide a forum for the most recent advances, addressing the challenges in modern mechanical transmissions. The conference proceedings address all aspects of gear and power transmission technology and range of applications (aerospace, automotive, wind turbine, and others) including topical issues such as power losses and efficiency, gear vibrations and noise, lubrication, contact failures, tribo-dynamics and nano transmissions. A truly international contribution with more than 120 papers from all over the world A judicious balance between fundamental research and industrial concerns Participation of the most respected international experts in the field of gearing A wide range of applications in terms of size, power, speed, and industrial sector

**Utility Vehicle Design Handbook - 1981**

*Automotive Software Engineering - Thomas Zurawka 2016-09-18*

Since the early seventies, the development of the automobile has been characterized by a steady increase in the deployment of onboard electronics systems and software. This trend continues unabated and is driven by rising end-user demands and increasingly stringent environmental requirements. Today, almost every function onboard the modern vehicle is electronically controlled or monitored. The software-based implementation of vehicle functions provides for unparalleled freedoms of concept and design. However, automobile development calls for the accommodation of contrasting prerequisites – such as higher demands on safety and reliability vs.

lower cost ceilings, longer product life cycles vs. shorter development times – along with growing proliferation of model variants. Automotive Software Engineering has established its position at the center of these seemingly conflicting opposites. This book provides background basics as well as numerous suggestions, rare insights, and cases in point concerning those processes, methods, and tools that contribute to the surefooted mastery of the use of electronic systems and software in the contemporary automobile.

**Innovative Design, Analysis and Development Practices in Aerospace and Automotive Engineering - Nicolas Gascoin 2020-09-26**

This book gathers the best articles presented by researchers and industrial experts at the International Conference on “Innovative Design, Analysis and Development Practices in Aerospace and Automotive Engineering (I-DAD 2020)”. The papers discuss new design concepts, and analysis and manufacturing technologies, with a focus on achieving improved performance by downsizing; improving the strength-to-weight ratio, fuel efficiency and operational capability at room and elevated temperatures; reducing wear and tear; addressing NVH aspects, while balancing the challenges of Euro VI/Bharat Stage VI emission norms, greenhouse effects and recyclable materials. Presenting innovative methods, this book is a valuable reference resource for professionals at educational and research organizations, as well as in industry, encouraging them to pursue challenging projects of mutual interest.

**Braking Systems and NVH Considerations - Ronald K Jurgen 2010-11-29**

With production and planning for new electric vehicles gaining momentum worldwide, this book – the fourth in a series of five volumes on this subject – provides engineers and researchers with perspectives on the most current and innovative developments regarding electric and hybrid-electric vehicle technology, design considerations, and components. This book features eight SAE technical papers, published from 2008 through 2010, that provide an overview of research on electric vehicle braking systems, and electric vehicle noise, vibration and harshness (NVH). Topics include: Regenerative braking systems in heavy duty hybrid-electric vehicles Development of an auxiliary pressurized hybrid brake system NVH integration in hybrid vehicles Spherical beamforming and buzz, squeak and rattle (BSR) testing

**Proceedings of the 1997 Noise and Vibration Conference - Society of Automotive Engineers 1997**

**The Shock Absorber Handbook - John C Dixon 1999-02-28**

This book provides comprehensive coverage of the design, installation and use of the shock absorber. Among the subjects highlighted are fluid dynamics, valve characteristics, damper characteristics, installation and motion ratios, and influence on vehicle ride and handling. Numerous example installations are described and discussed. Testing machines, as well as methods of laboratory testing, are also described in detail. The widely varying characteristics of variable dampers, and the relationship to their design features, are explained.

**Fundamentals of Vehicle Dynamics - Thomas Gillespie 2021-04-29**

A world-recognized expert in the science of vehicle dynamics, Dr. Thomas Gillespie has created an ideal reference book that has been used by engineers for 30 years, ranging from an introduction to the subject at the university level to a common sight on the desks of engineers throughout the world. As with the original printing, *Fundamentals of Vehicle Dynamics, Revised Edition*, strives to find a middle ground by balancing the need to provide detailed conceptual explanations of the engineering principles involved in the dynamics of

ground vehicles with equations and example problems that clearly and concisely demonstrate how to apply such principles. A study of this book will ensure that the reader comes away with a solid foundation and is prepared to discuss the subject in detail. Ideal as much for a first course in vehicle dynamics as it is a professional reference, *Fundamentals of Vehicle Dynamics, Revised Edition*, maintains the tradition of the original by being easy to read and while receiving updates throughout in the form of modernized graphics and improved readability. Inasmuch as the first edition proved to be so popular, the Revised Edition intends to carry on that tradition for a new generation of engineers.

**Automotive Control Systems** - A. Galip Ulsoy 2012-04-30  
This textbook introduces advanced control systems for vehicles, including advanced automotive concepts and the next generation of vehicles for ITS.

**Diesel Engine System Design** - Qianfan Xin 2011-05-26  
*Diesel Engine System Design* links everything diesel engineers need to know about engine performance and system design in order for them to master all the essential topics quickly and to solve practical design problems. Based on the author's unique experience in the field, it enables engineers to come up with an appropriate specification at an early stage in the product development cycle. Links everything diesel engineers need to know about engine performance and system design featuring essential topics and techniques to solve practical design problems. Focuses on engine performance and system integration including important approaches for modelling and analysis. Explores fundamental concepts and generic techniques in diesel engine system design incorporating durability, reliability and optimization theories.

**Automotive Tire Noise and Vibrations** - Xu Wang 2020-07-29  
*Automotive Tire Noise and Vibrations: Analysis, Measurement and Simulation* presents the latest generation mechanisms of tire/road noise. The book focuses not only on tire/road noise issues from the tire/road structures, materials and dynamics, but also from a whole vehicle system. The analyses cover finite element modeling, mathematical simulations and experimental tests, including works done to mitigate noise. This book provides a summary of tire noise and vibration research, with a focus on new simulation and measurement techniques. Covers new measurements techniques and simulation strategies that are critical in accurately assessing tire noise and vibration. Provides recent simulation progress and findings of CAE on analysis of generation mechanisms of the tire/road noise. Features a Statistical Energy Analysis (SEA) and model of a multilayer trim to enhance the sound absorption of tire/road noise.

*Road Vehicle Dynamics* - Giancarlo Genta 2015

**Vehicle/Tire/Road Dynamics** - Tan Li 2022-11-24  
*Vehicle/Tire/Road Dynamics: Handling, Ride, and NVH* presents the connection between NVH and conventional vehicle dynamics where both tire and road play a key role. In this book, there is a chapter for handling dynamics that provides an introduction to ride dynamics and a chapter for ride dynamics that provides an introduction to NVH, presenting better coherence and synergy between these major areas of vehicle/tire dynamics. Accompanying the fundamental theories, case studies are given to facilitate comprehension. In addition to the experimental implementations, the state-of-the-art approaches to simulating vehicle/tire dynamics are presented from the viewpoint of both industry and academia. This new book bridges the gap for experts in tire or pavement NVH (also tire-pavement interaction noise) and those who are experts in vehicle dynamics. Conventional vehicle dynamics (e.g.,

handling/braking/cornering) is focused on low-frequency performance while NVH (noise/vibration/harshness) is focused on high-frequency performance. There is also another area called "ride" (comfort/stability) which focuses on mid-frequency. Presents a closed loop system for vehicle dynamics, covering handling, ride and NVH. Provides insights into how intelligent tires will enhance autonomous vehicle control and optimize multiple performances, especially for electric vehicles. Demonstrates how pavement characteristics could greatly influence vehicle handling/ride/NVH and improve/balance these performances.

**Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles** - National Research Council 2015-09-28

The light-duty vehicle fleet is expected to undergo substantial technological changes over the next several decades. New powertrain designs, alternative fuels, advanced materials and significant changes to the vehicle body are being driven by increasingly stringent fuel economy and greenhouse gas emission standards. By the end of the next decade, cars and light-duty trucks will be more fuel efficient, weigh less, emit less air pollutants, have more safety features, and will be more expensive to purchase relative to current vehicles. Though the gasoline-powered spark ignition engine will continue to be the dominant powertrain configuration even through 2030, such vehicles will be equipped with advanced technologies, materials, electronics and controls, and aerodynamics. And by 2030, the deployment of alternative methods to propel and fuel vehicles and alternative modes of transportation, including autonomous vehicles, will be well underway. What are these new technologies - how will they work, and will some technologies be more effective than others? Written to inform The United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA) and Environmental Protection Agency (EPA) Corporate Average Fuel Economy (CAFE) and greenhouse gas (GHG) emission standards, this new report from the National Research Council is a technical evaluation of costs, benefits, and implementation issues of fuel reduction technologies for next-generation light-duty vehicles. *Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles* estimates the cost, potential efficiency improvements, and barriers to commercial deployment of technologies that might be employed from 2020 to 2030. This report describes these promising technologies and makes recommendations for their inclusion on the list of technologies applicable for the 2017-2025 CAFE standards.

**Simultaneous Engineering for New Product Development** - Jack Ribbens 2000-02-14

An integrated, highly practical approach to product development using simultaneous engineering. Industrial engineers and designers as well as managers working on new product development (NPD) typically do not have the time or the expertise to get involved in functions outside their immediate area. Yet the very nature of NPD requires a number of functions and processes to be performed concurrently. This is where simultaneous engineering comes in. *Simultaneous Engineering for New Product Development* offers state-of-the-art, integrated coverage of these two hot topics in manufacturing. Industry expert Jack Ribbens draws on firsthand experience with the successful application of simultaneous engineering in the automotive industry, discussing how this approach can help streamline the entire development and production process, resulting in high-quality, competitive goods. He examines all phases of the process, devoting a chapter to each key element - from market research to design and engineering to manufacturing, selling, and customer service and support. And while most books on concurrent engineering

stress the theoretical aspects of the field, Ribbens's book is decidedly practical, complete with case studies from the automotive, aerospace, heavy vehicle, and electronic industries that can be applied to any manufactured product. With mathematical model development as well as useful graphs, checklists, and references, *Simultaneous Engineering for New Product Development* will help manufacturing professionals take advantage of new trends and technologies in manufacturing well into the twenty-first century.

**Composite Materials in Design Processes** - Giangiacomo Minak 2021-09-02

The use of composite materials in the design process allows one to tailor a component's mechanical properties, thus reducing its overall weight. On the one hand, the possible combinations of matrices, reinforcements, and technologies provides more options to the designer. On the other hand, it increases the fields that need to be investigated in order to obtain all the information requested for a safe design. This Applied Sciences Special Issue, "Composite Materials in Design Processes", collects recent advances in the design methods for components made of composites and composite material properties at a laminate level or using a multi-scale approach.

Future Car Challenge - 1999

*2014 Passenger Car Yearbook* - Automotive Engineering International 2013-12-10

Each year car manufacturers release new production models that are unique and innovative. These cars begin as concepts then go through the process of prototyping. The process of creating a new model can take years, involving extensive testing and refining of aerodynamics, safety, engine components, and vehicle styling. The production model is the result of this lengthy process, and its new technologies reflect the latest engineering standards as well as market trends. The 2014 Passenger Car Yearbook details the key engineering developments in the passenger vehicle industry of the year. Each new car model is profiled in its own chapter with one or more articles that were previously published and written by the award-winning editors of Automotive Engineering International. The novel engineering aspects of each new model are explored in depth. Interviews with key developers and engineers are included for some of the models, providing inside details about how initial ideas evolved in the cars that consumers drive. Published for enthusiasts who are interested in new car models and their technologies, as well as practicing automotive engineers who are interested in new engineering trends such as hybrid systems, powertrain designs, automotive design, lightweighting, and materials, and new engineers who want an overview of current trends, the 2014 Passenger Car Yearbook also:

- Provides a single source for information on the key engineering trends of one year.
- Allows the reader to skip to chapters that cover specific car models that interest them, or read about all models from beginning to end.
- Makes for dynamic reading, with its large number of big, full-color images and easy-reading magazine format.

**NHV Analysis Techniques for Design and Optimization of Hybrid and Electric Vehicles** - Nuria Campillo-Davo 2016

**Directory of Published Proceedings** - 1996

**Automotive Engineering International** - 2007

**Essential Readings in Magnesium Technology** - Suveen Mathaudhu 2016-12-06

This is a compilation of the best papers in the history of Magnesium Technology, a definitive annual reference in the field of magnesium production and related light metals technologies. The volume contains a strong

topical mix of application and fundamental research articles on magnesium technology. Section titles:  
1. Magnesium Technology History and Overview  
2. Electrolytic and Thermal Primary Production  
3. Melting, Refining, Recycling, and Life-Cycle Analysis  
4. Casting and Solidification  
5. Alloy and Microstructural Design  
6. Wrought Processing  
7. Modeling and Simulation  
8. Joining  
9. Corrosion, Surface Treatment, and Coating

*Racing Chassis and Suspension Design* - Carroll Smith 2004-05-21

Hand-selected by racing engineer legend Carroll Smith, the 28 SAE Technical Papers in this book focus on the chassis and suspension design of pure racing cars, an area that has traditionally been - farmed out - to independent designers or firms since the early 1970s. Smith believed that any discussion of vehicle dynamics must begin with a basic understanding of the pneumatic tire, the focus of the first chapter. The racing tire connects the racing car to the track surface by only the footprints of its four tires. Through the tires, the driver receives most of the sensory information needed to maintain or regain control of the race car at high force levels. The second chapter, focusing on suspension design, is an introduction to this complex and fascinating subject. Topics covered include chassis stiffness and flexibility, suspension tuning on the cornering of a Winston Cup race car, suspension kinematics, and vehicle dynamics of road racing cars. Chapter 3 addresses the design of the racing chassis design and how aerodynamics affect the chassis, and the final chapter on materials brings out the fact that the modern racing car utilizes carbon construction to the maximum extent allowed by regulations. These technical papers, written between 1971 and 2003, offer what Smith believed to be the best and most practical nuggets of racing chassis and suspension design information.

**Automotive Chassis Engineering** - David C Barton 2018-03-15

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 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, 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 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.

*Advanced Composites Engineering And Its Nano-bridging Technology: Applied Research For Polymer Composites And Nanocomposites* - Yun-hae Kim 2021-03-15

This book applies various concepts based on practical experimental considerations to industrial fields: aerospace structure, shipbuilding and marine engineering, automotive, and elevator composites. Written by prominent authors who contribute to the success of advanced composites technology and leading influential laboratories and companies, the book includes unique concept research, recent trends, and further insights. Particular effort is made to deal with notable constituent materials of advanced composites, even nanostructures. This book deals with applied research from the basics of a rare nanomaterial called halloysite nanotube, which is environmentally friendly and leads nanomaterials in advanced industrial composite materials and functional, structural materials with high practical value. This book includes practical nano-bridging techniques on nanostructures, manufacturing, analysis, and advanced composites' applications using the research know-how accumulated over the years by prominent experts in these areas.

**Driving Identities** - Ken McLeod 2020-04-30

Driving Identities examines long-standing connections between popular music and the automotive industry and how this relationship has helped to construct and reflect various socio-cultural identities. It also challenges common assumptions regarding the divergences between industry and art, and reveals how music and sound are used to suture the putative divide between human and non-human. This book is a ground-breaking inquiry into the relationship between popular music and automobiles, and into the mutual aesthetic and stylistic influences that have historically left their mark on both industries. Shaped by new historicism and cultural criticism, and by methodologies adapted from gender, LGBTQ+, and African-American studies, it makes an important contribution to understanding the complex and

interconnected nature of identity and cultural formation. In its interdisciplinary approach, melding aspects of ethnomusicology, sociology, sound studies, and business studies, it pushes musicological scholarship into a new consideration and awareness of the complexity of identity construction and of influences that inform our musical culture. The volume also provides analyses of the confluences and coactions of popular music and automotive products to highlight the mutual influences on their respective aesthetic and technical evolutions. Driving Identities is aimed at both academics and enthusiasts of automotive culture, popular music, and cultural studies in general. It is accompanied by an extensive online database appendix of car-themed pop recordings and sheet music, searchable by year, artist, and title.

**Suspension System** - Michael Trzesniowski 2023-04-17

In this book, the reader learns the essential differences to the passenger car through the analysis divided according to assemblies. This gives him the tools to apply the detailed knowledge he has acquired to the design and development of competition vehicles. The chassis determines the driving behaviour and thus the "DNA" of a racing vehicle like no other assembly. Starting with the tyre - the decisive mechanical component - all the components of the wheel suspension including steering and braking system are presented and discussed. The focus is on the double wishbone and suspension strut axles. The design of wheel suspensions starts with kinematic considerations, leads via component design to considerations of the vehicle dynamics. Ultimately, the maximum forces of the tires in the transverse and circumferential directions are to be exploited while keeping the vehicle controllable. Due to the detailed, in-depth presentation, the work is just as suitable for the interested motorsport enthusiast as it is for the engineer in practice who is dealing with questions relating to racing suspensions. The formula material is prepared in such a way that the book can also be used as a reference work.