1. Record Nr. UNINA9910797866803321

Titolo	Advanced autonomous vehicle design for severe environments / / edited by Vladimir V. Vantsevich and Michael V. Blundell
Pubbl/distr/stampa	Amsterdam, [Netherlands] : , : IOS Press : , : Published in cooperation with NATO Emerging Security Challenges Division, , 2015 ©2015
ISBN	1-61499-576-1
Descrizione fisica	1 online resource (408 p.)
Collana	NATO Science for Peace and Security Series. Sub-Series D: Information and Communication Security, , 1879-8292 ; ; Volume 44
Disciplina	388.312
Soggetti	Autonomous vehicles
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	""Title Page""; ""Preface""; ""List of Contributors""; ""Contents""; ""Chapter 1. Vehicle Dynamics and System Design - History and Future Directions""; ""Historic Aspects and Future Research Directions in Vehicle Dynamics and System Design""; ""Past, Present and Future of Control Theory Applied to Autonomous Agents""; ""Chapter 2. Severe Environmental Conditions and Situations""; ""Experimental and Modeling Terramechanics Studies""; ""Terrorist Threats, Agile Vehicle Trajectory Deviation and Critical Reposition in Interaction with Environment"" ""Chapter 3. Vehicle Agility Fundamentals and Applications in Severe Driving Conditions""""""Agility in Vehicle Dynamics and Relaxation Time Constants""; ""Modeling of Agile Stochastic Terrain Friction/Resistance Properties in Correletion with Terrian Geometry""; ""Fundamentals of Agile Terrain Mobility Evaluation of Unmanned Ground Vehicles""; ""Chapter 4. Vehicle Mobility and Energy Efficiency""; ""Wheel - Vehicle - Step Obstacle Interaction""; ""Estimation of Soil Damage""; ""Vehicle Terrain Mobility Enhancement and Minimization of Energy Consumption"" ""A Method of a Wheel Power Distribution and Its Application to Vehicles""""""Chapter 5. Inverse Vehicle Dynamics and Operational Fusion of Vehicle System Dynamics""; ""Inverse Dynamics Problems in Vehicle

Applications""; ""Passive and Active Operational Fusion of Vehicle System Dynamics (Coupled and Interactive Dynamics)""; ""Chapter 6. Mathematical and Computational Techniques and Software Products""; ""Treatment of Uncertainties in Multibody Dynamic Systems Using a Generalized Polynomial Chaos Approach; Case Study on a Full Vehicle"" ""Application of the Generalized Polynomial Chaos to the LQR Control Problem with Uncertain Parameters in the Formulation""""""Multibody Dynamics Techniques for Real-Time Parameter Estimation""; ""The Use of Multibody Systems in Vehicle Modelling Simulation""; ""Chapter 7.""; ""New Methods and Techniques in Online Control and Learning""; ""Introduction on Reinforcement Learning, and Game Theory""; ""Optimal Control""; ""Optimal Control with Saturations""; ""Event-Triggered Optimal Control""; ""H-Infinity Control and Zero Sum Games""; ""Multi-Player Non-Zero Sum Games""; ""Graphical Games"" ""Conclusion and Future Work""""""Chapter 8.""; ""Mechatronics of Vehicle Control and Self-Powered Systems""; ""Introduction to Mechatronics""; ""Mechatronic Systems: Dynamic Models and Physical Component Topology""; ""Control Performance in Agile Vehicles and Cyber Physical Systems""; ""Self-Powered Dynamic Systems for Energy Efficiency""; ""Mechatronic Design""; ""Chapter 9. Tyre Modelling in Vehicle Dynamics""; ""An Introduction to Tire Modelling""; ""Tire Force and Moment Characteristics""; ""Tire Modelling""; ""Chapter 10. Vehicle Design and Analysis for Ride, Handling and Durability"" ""The Role of the Suspension System""