



Vehicle Dynamics and Control (Mechanical Engineering Series)

By Rajesh Rajamani

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Vehicle Dynamics and Control (Mechanical Engineering Series) By Rajesh Rajamani

Vehicle Dynamics and Control provides a comprehensive coverage of vehicle control systems and the dynamic models used in the development of these control systems. The control system applications covered in the book include cruise control, adaptive cruise control, ABS, automated lane keeping, automated highway systems, yaw stability control, engine control, passive, active and semi-active suspensions, tire-road friction coefficient estimation, rollover prevention, and hybrid electric vehicles. In developing the dynamic model for each application, an effort is made to both keep the model simple enough for control system design but at the same time rich enough to capture the essential features of the dynamics. A special effort has been made to explain the several different tire models commonly used in literature and to interpret them physically.

In the second edition of the book, chapters on roll dynamics, rollover prevention and hybrid electric vehicles have been added, and the chapter on electronic stability control has been enhanced.

The use of feedback control systems on automobiles is growing rapidly. This book is intended to serve as a useful resource to researchers who work on the development of such control systems, both in the automotive industry and at universities. The book can also serve as a textbook for a graduate level course on Vehicle Dynamics and Control.

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- Sales Rank: #1790309 in eBooks
- Published on: 2011-12-27
- Released on: 2011-12-27
- Format: Kindle eBook

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Editorial Review

Review

From the reviews of the second edition:

“Vehicle Dynamics and Control is one book in the ‘Springer Mechanical Engineering Series.’ Its almost 500 pages are written in a clear and concise format and will be most useful as a resource to researchers working on the development of vehicle dynamic controls in industry or university and it can also be used as a graduate level textbook on the same subject. ... Each chapter has a summary, a nomenclature list and an extensive list of references.” (Deane Jaeger, Noise Control Engineering Journal, Vol. 62 (1), January-February, 2014)

From the Back Cover

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