

Vehicle Dynamics

Theory and Application

This intermediate textbook is appropriate for students in vehicle dynamics courses, in their last year of undergraduate study or their first year of graduate study. It is also appropriate for mechanical engineers, automotive engineers, and researchers in the area of vehicle dynamics for continuing education or as a reference. It addresses fundamental and advanced topics, and a basic knowledge of kinematics and dynamics, as well as numerical methods, is expected. The contents are kept at a theoretical-practical level, with a strong emphasis on application. This third edition has been reduced by 25%, to allow for coverage over one semester, as opposed to the previous edition that needed two semesters for coverage. The textbook is composed of four parts:

- Vehicle Motion: covers tire dynamics, forward vehicle dynamics, and driveline dynamics
- Vehicle Kinematics: covers applied kinematics, applied mechanisms, steering dynamics, and suspension mechanisms
- Vehicle Dynamics: covers applied dynamics, vehicle planar dynamics, and vehicle roll dynamics
- Vehicle Vibration: covers applied vibrations, vehicle vibrations, and suspension optimization

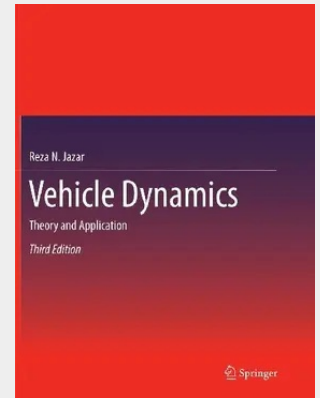
Vehicle dynamics concepts are covered in detail, with a concentration on their practical uses. Also provided are related theorems and formal proofs, along with case examples. Readers appreciate the user-friendly presentation of the science and engineering of the mechanical aspects of vehicles, and learn how to analyze and optimize vehicles' handling and ride dynamics.

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128,39 €

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Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783319851556

Medium: Buch

ISBN: 978-3-319-85155-6

Verlag: Springer

Erscheinungstermin: 01.08.2018

Sprache(n): Englisch

Auflage: Third Auflage 2017

Produktform: Kartoniert

Gewicht: 2704 g

Seiten: 988

Format (B x H): 210 x 279 mm

