Race Car Vehicle Dynamics
William F. Milliken and Douglas L. Milliken

Written for the engineer as well as the race car enthusiast, *Race Car Vehicle Dynamics* is a comprehensive book on the fundamental concepts of vehicle dynamics and their application in a racing environment. Much of the information included is not available in any other vehicle dynamics text. Although the book's primary focus is the race car, the engineering fundamentals it details are also applicable to passenger car design and engineering.

Chapters include:

1. The Problem Imposed By Racing
2. Tire Behavior
3. Aerodynamic Fundamentals
4. Vehicle Axis Systems
5. Simplified Steady-State Stability and Control
6. Simplified Transient Stability and Control
7. Steady-State Pair Analysis
8. Force-Moment Analysis
9. "g-g" Diagram
10. Race Car Design
11. Testing and Development
12. Chassis Set-up
13. Historical Note on Vehicle Dynamics Development
14. Tire Data Treatment
15. Applied Aerodynamics
16. Ride and Roll Rates
17. Suspension Geometry
18. Wheel Loads
19. Steering Systems
20. Driving and Braking
21. Suspension Springs
22. Dampers
23. Compliances

The book is also well-illustrated with over 450 figures and tables.

About the authors

Bill and Doug Milliken have pioneered the transfer of aeronautical stability and control technologies to the automobile. They have been involved in developing many original vehicle dynamics theories and principles, including the Moment Method, "g-g" Diagram, Pair Analysis, Lap Time Simulation and Tire Data Normalization. As President and Vice President of Milliken Research Associates, Inc., respectively, they have collaborated on research programs for race teams, automobile and tire companies for over 20 years. Bill has been involved in various aspects of racing and race car engineering since the 1940's, and has over forty years of experience in automotive and aeronautical vehicle dynamics.

Key to Front Cover:

MMM = Milliken Moment Method
VDS = Vehicle Dynamics Simulation
TDA = Tire Data Assistant

LTS = Lap Time Simulation
G-G = Maneuvering Envelope
FRC = Friction "Circles"

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