

Mathematical Methods for Accident Reconstruction

A Forensic Engineering Perspective

Over the past 25 years, Harold and Darren Franck have investigated hundreds of accidents involving vehicles of almost every shape, size, and type imaginable. In *Mathematical Methods for Accident Reconstruction: A Forensic Engineering Perspective*, these seasoned experts demonstrate the application of mathematics to modeling accident reconstructions involving a range of moving vehicles, including automobiles, small and large trucks, bicycles, motorcycles, all-terrain vehicles, and construction equipment such as hoists and cranes. The book is anchored on basic principles of physics that may be applied to any of the above-named vehicles or equipment. Topics covered include the foundations of measurement, the various energy methods used in reconstruction, momentum methods, vehicle specifications, failure analysis, geometrical characteristics of highways, and softer scientific issues such as visibility, perception, and reaction. The authors examine the fundamental characteristics of different vehicles, discuss the retrieval of data from crash data recorders, and review low speed impacts with an analysis of staged collisions. Finally, the book details standards and protocols for accident reconstruction. Exploring a broad range of accident scenarios and also acknowledging the limits of applicability of the various physical methods employed, the breadth and depth of the book's coverage makes it a critical reference for engineers and scientists who perform vehicular accident reconstructions.

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206,50 €

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Nicht mehr lieferbar

Artikelnummer: 9781420088977

Medium: Buch

ISBN: 978-1-4200-8897-7

Verlag: Taylor & Francis

Erscheinungstermin: 01.09.2009

Sprache(n): Englisch

Auflage: 1. Auflage 2009

Produktform: Gebunden

Gewicht: 580 g

Seiten: 322

Format (B x H): 162 x 239 mm

