Overall, this is a worthwhile book on NLOS radar, and it is hoped that future editions will be produced as this interesting field of work develops.

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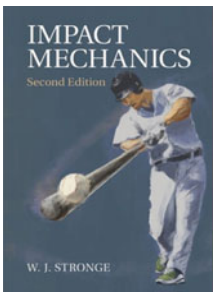

Impact Mechanics – second edition

W. J. Stronge

Cambridge University Press, University Printing House, Shaftesbury Road, Cambridge CB2 8BS, UK. 2018. xx; 362 pp. Illustrated. £120. ISBN 978-0-521-84188-7.

The present book *Impact Mechanics* provides an excellent theoretical foundation for engineering students and industrialists dealing with impact problems. This is the second edition of the book, which mainly focuses on non-penetrating collisions. In the first chapter, collisions are categorised into four groups based on the method of analysis, including particle impact, rigid-body impact and transverse and axial impacts on flexible bodies. The assumptions behind each method of analysis and the applicability of each method in solving low-speed impact problems are clearly explained. This is a useful introductory chapter and is especially beneficial to students with little or no background in this subject.

The subsequent four chapters are dedicated to rigid-body impact analysis.

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The complexity in these chapters gradually increases from simple collinear impacts (one dimensional) in chapter 2, to planar, two-dimensional impacts with eccentric configurations in chapter 3 to three-dimensional impacts in chapter 4. Finally, in chapter 5, tangential compliance is introduced and its effect on stick–slip behaviour is discussed. Various theories such as Hertzian contact theory in chapter 6, elastic wave propagation theory in chapter 7 and vibration analysis in chapter 11 are employed to investigate the effect of local and global (structural) compliance of deformable bodies on impact parameters such as contact pressure, contact duration, coefficient of restitution and energy dissipated through wave propagation during impact.

Chapter 9 is a new addition to this edition and discusses in detail the influence of material rate dependency, including viscoelasticity and viscoplasticity, on impact parameters. The book also explains the generalised impact analysis of multi-body systems in chapter 8, including mechanisms where rigid bodies are connected by joints and separate bodies that are only in contact. In chapter 11, theory considering the propagation of destabilising waves through mechanical systems including the 'domino effect' is discussed.

The book ends by introducing a new short chapter where behaviour of various types of sport balls is explained. Throughout the book, wherever possible, some examples and their solutions are given, and problems are presented at the end of most chapters.

In summary, this is an excellent reference book for graduate-level students and professionals interested in non-colliding impacts. The rich theoretical content of this book alongside recent advances in experimental and numerical methods can provide engineers in particular with necessary knowledge and tools to design more effectively for complex impact problems.

Dr Iman Mohagheghian

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