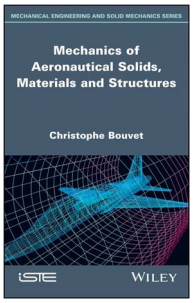
inclusion of the numerical solutions to these problems.

Overall, this is a very good undergraduate level text book covering basics of thermo-chemical rocket propulsion elements and introducing key principles of other rocket propulsion systems.

Dr Katharine Smith, MRAeS



Mechanics of Aeronautical Solids, Materials and Structures

C. Bouvet

ISTE Ltd. and John Wiley and Sons, The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ. 2017. xiv; 284pp. Illustrated. £100. ISBN 978-1-78630-115-4.

Mechanics of Aeronautical Solids, Materials and Structures introduces the fundamentals of the mechanics of materials to audiences interested in airframe structures. The book is aimed at presenting the key elements and concepts that any structural engineer needs to be aware off, the fundamentals of stress, strain and their constitutive relations; the experimental behaviour of materials along with the material properties and applicable failure theories; the methods and the design tools for analysing airframe structures. The book is mainly targeted for undergraduate aerospace engineering students.

The book opens with the definition and explanation of fundamental concepts such as stress, strain and their constitutive relation. The concepts are presented adequately, but

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they are hidden within complicated expressions thus the presentation necessitates from the readers to be already familiar with and have mastered the vector/tensor calculus as well as the basic differential calculus.

Throughout the text, discussion evolves mainly, but not solely, around homogenous material in an effort to focus more on the widely used metallic materials for airframe structures. The concepts of laminated composites – and the analysis of – are briefly touched upon which may have an adverse effect on the reader since a more extensive reference is required to properly comprehend the mechanics of composite materials. Similar to previously mentioned, energy methods and the application of to a discretised continuum giving rise to the finite element method is also briefly discussed and the readers are expected to be aware of the underlining concepts of the method. The last chapters present a number of very interesting and educative examples along with their solutions which put the previously outlined theory into context.

Overall, this textbook provides aerospace engineering undergraduates with a mathematical description on the fundamentals of the mechanics of materials. Apart from the fundamentals, the content is lean and on some occasions not to the expected level for understanding. The audience has to have some prior knowledge in few key elements and knowledge domain areas.

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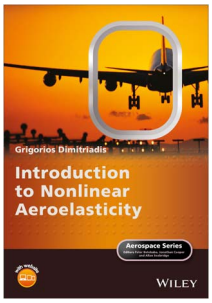

Introduction to Nonlinear Aeroelasticity

G. Dimitriadis

John Wiley and Sons, The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, UK. 2017. xiii; 573pp. Illustrated. £81.95. ISBN 978-1-118-61347-4.

Despite aeroelasticity being taught in most aerospace engineering programmes, and an essential discipline in aircraft design offices, there are very few books that cover the subject. An unintended consequence of that is often the research in the area has moved in circles, as many ideas that do not get disseminated in bounded printed form reappear periodically (often with a frustratingly low period!).

It is in this context that the new book by Prof Dimitriadis is a very welcome addition to the aeroelastic corpus. As the title says, it is an introductory level book to the many problems in aeroelasticity that cannot be described by linear theories. It is also an introduction to nonlinear dynamics for aeroelasticians, or, more generally, for aerospace engineers.

The scope is vast, ranging from numerical methods for the analysis of nonlinear

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