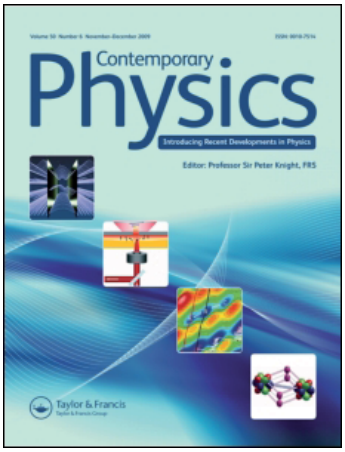

Contemporary Physics
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713394025

An Introduction to Lagrangian Mechanics, by A.J. Brizard

Miguel A. F. Sanjuán [a]
[a] Universidad Rey Juan Carlos,

First published on: 03 March 2010

To cite this Article Sanjuán, Miguel A. F.(2010) 'An Introduction to Lagrangian Mechanics, by A.J. Brizard', Contemporary Physics,, First published on: 03 March 2010 (iFirst)
To link to this Article: DOI: 10.1080/00107510903318806
URL: http://dx.doi.org/10.1080/00107510903318806

Contemporary Physics
2010, 1, i*First* article

Taylor & Francis
Taylor & Francis Group

BOOK REVIEW

An Introduction to Lagrangian Mechanics, by A.J. Brizard, Singapore, World Scientific, 2008, 259 pp., £24 (paperback), ISBN 978-981-281-837-9. Scope: textbook. Level: undergraduate and graduate students.

A new textbook on Lagrangian Mechanics? Certainly there are many good textbooks on this matter, each one with its own characteristics, advantages and disadvantages. The one reviewed here follows the tradition of the great authors, such as Whittaker, Landau and Lifshitz or the recent Goldstein, Pool and Safko and the excellent text by Lanczos on the variational principles of mechanics. The goals pursued by the author are to offer a textbook developing the key concepts in Lagrangian Mechanics, to introduce the student to the use of numerical examples (although it does not contemplate the use of numerical simulations by computer), the introduction of numerous historical notes and finally it attempts to serve as a bridge between classical and quantum mechanics. From this point of view, the book is excellent providing a solid foundation in analytical mechanics. The selection of topics, the analysis used for the description of all the key concepts, the historical description of the very many characters appearing along the development of the theory, including the rigorous mathematical analysis used for the exposition of the different chapters, makes it a very useful textbook. Each chapter ends with a nice collection of interesting exercises intended to be solved by the student. Also something remarkable, are the nice examples distributed in the text and the mathematical appendices, where the one on elliptic functions and integrals is rather complete, with many interesting applications useful to describe the dynamics of nonlinear oscillators. Even though all these make an excellent book, my main concern is the kind of students for which such a book could be used. The author mentions that he has used it as lecture notes for a one-semester course for junior students in an American College. I consider that the level of the textbook is very high, and in this manner I think it would be more appropriate for a postgraduate course, once the student has a solid knowledge of classical mechanics and a profound knowledge of mathematics; without it I hardly believe the book can be followed. It can also be very useful as a source reference for lecturers in advanced mechanics, by selecting the appropriate sections and adapting them to the level of the students in class.

Professor Miguel A.F. Sanjuán
Universidad Rey Juan Carlos
miguel.sanjuan@urjc.es

ISSN 0010-7514 print/ISSN 1366-5812 online
DOI: 10.1080/00107510903318806
http://www.informaworld.com