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A student's guide to vectors and tensors.

Cambridge: Cambridge University Press (ISBN 978-0-521-17190-8/pbk; 978-0-521-19369-6/hbk). x, 197 p. (2012).

In the author's own words: "This book has one purpose: to help you understand vectors and tensors so that you can use them to solve problems. ... You'll also find the presentation to be very different from that of other books. The explanations in this book are written in an informal style in which mathematical rigor is maintained only insofar as it doesn't obscure the underlying physics." This describes the book in a nutshell. The usual textbook on vectors and tensors defines these objects formally, states and proves theorems, does some examples and supplies exercises for the student to do. In the reviewer's experience it takes students a long time to get a feeling for what vectors and especially tensors are, and in this respect this book is very useful: it helps them become confident in using and applying these concepts. This book is thus not a textbook – it assumes an acquaintance with vector and tensor algebra and physics, along with differential operators. It requires the student to start reading each section at the beginning in order to pick-up the thread. That may be a bit tedious, but will be amply rewarded. The book is more of a "Companion" than a "Guide". The chapter headings are: Vectors, Vector operations, Vector applications, Co- and contravariant vector components, Higher-rank tensors, Tensor applications. Each chapter concludes with a section of problems and, moreover, the author supplies an interactive website and a series of audio podcasts. In the reviewer's opinion this book will certainly become as popular as the author's book "A student's guide to Maxwell's equations" (1978; Zbl 1151.78001) which uses the same approach. *Rabe von Randow (Bonn)*

Classification: H65
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