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<<张量分析简论>>

图书基本信息

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前言

When I was an undergraduate, working as a co-op student at North Ameri-can Aviation, I tried to learn something about tcosors. In the AeronauticalEngineering Department at MIT, I had just finished an introductory coursein classical mechanics that so impressed me that to this day I cannot watch aplane in flight——especially in a turn——without imaging it bristling with vec-tors. Near the end of the course the professor showed that, if an airplane istreated as a rigid body, there arises a mysterious collection of rather simple-looking integrals called the components of the moment of inertia tensor.Tensor——what power those two syllables seemed to resonate. I had heard theword once before, in an aside by a graduate instructor to the cognoscenti inthe front row of a course in strength of materials. "What the book calls stressis actually a tensor...." With my interest twice piqued and with time off from fighting the brush-fires of a demanding curriculum, I was ready for my first serious effort atself-instruction. In Los Angeles, after several tries, I found a store with a bookon tensor analysis. In my mind I had rehearsed the scene in which a graduatestudent or professor, spying me there, would shout, "You're an under-graduate. What are you doing looking at a book on tensors ?
" But luck wasmine: the book had a plain brown dust jacket. Alone in my room, I turnedimmediately to the definition of a tensor:. "A 2rid order tensor is a collectionof na objects that transform according to the rule..." and thence followed aninscrutable collection of superscripts, subscripts, overbars, and partial deriv-atives. A pedagogical disaster !
Where was the connection with those beauti-ful, simple, boldfaced symbols, those arrows that l could visual/ze so well ?
I was not to find out until after graduate school. But it is my hope that,with this book, you, as an undergraduate, may sail beyond that bar on whichI once foundered. You will find that I take nearly three chapters to prepare.

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内容概要

本书是Springer数学本科生教程系列之一，适合于工程、物理、数学以及相关应用学科的高年级本科生。
本书可以作为学习连续介质力学和广义相对论的很好的过度。
这部简明的教程还包括了一些给出解答的问题和一些练习。
读者有基本微积分和线性代数的知识，并对力学和几何的基本观点熟悉将会更容易学习理解本书内容。

本书是第2版，增加了不少新的练习，也增加了一部分专门讲述微分几何，这可以引导读者学习在弯曲连续理论中的应用。

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