《经典力学新基础》

图书基本信息

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内容概要

《经典力学新基础(第2版)(影印版)》主要内容：This book provides an introduction to geometric algebra as an unified language for physics and mathematics. It containes extensive applications to classical mechanics in a textbook format suitable for courses at an intermediate level. The text is supported by more than 200 diagrams to help develop geometrical and physical intuition.Besides covering the standard material for a course on the mechanics of particles and rigid bodies, the book introduces new, coordinatefree methods for rotational dynamics and orbital mechanics,developing these subjects to a level well beyond that of other textbooks. These methods have been widely applied in recent years to biomechanics and robotics, to computer vision and geometric design, to orbital mechanics in governmental and industrial space programs, as well as to other branches of physics. The book applies them to the major perturbations in the solar system, including the planetary perturbations of Mercury's perihelion.
Geometric algebra integrates conventional vector algebra (along with its established notations) into a system with all the advantages of quaternions and spinors. Thus, it increases the power of the mathematical language of classical mechanics while bringing it closer to the language of quantum mechanics. This book systematically develops purely mathematical applications of geometric algebra useful in physics, including extensive applications to linear algebra and transformation groups. It contains sufficient material for a course on mathematical topics alone.
The second edition has been expanded by nearly a hundred pages on relativistic mechanics. The treatment is unique in its exclusive use of geometric algebra and in its detailed treatment of spacetime maps. Collisions, motion in uniform fields and relativistic precession. It conforms with Einstein's view that the Special Theory of Relativity is the culmination of developments in classical mechanics.

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精彩短评

1、作者是大牛级人物。而且其写作水平也是大牛。很多复杂问题被他一介绍，感觉清晰无比。
2、印刷质量还不错，但是有一本封面破了。
3、全是英语 看不懂啊！
4、没有太理解它的新范式。。。
5、补记
6、一口气读完了第一章，讲述几何代数的源起，看情形作者是要使用几何代数作为基本的数学语言来描述经典力学。不错，有继续往下读的念头。

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