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<<物理学家用的微分几何和李群>>

图书基本信息

书名：<<物理学家用的微分几何和李群>>

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作者：斯洛伐 费茨科

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前言

This is an introductory text dealing with a part of mathematics： modem differential geometry and the theory of Lie groups. It is written from the perspective of and mainly for the needs of physicists. The orientation on physics makes itself felt in the choice of material, in the way it is presented (e.g. with no use of a definition-theorem-proof scheme), as well as in the content of exercises (often they are closely related to physics). Its potential readership does not, however, consist of physicists alone. Since the book is about mathematics, and since physics has served for a fairly long time as a rich source of inspiration for mathematics, it might be useful for the mathematical community as well. More generally, it is suitable for anybody who has some (rather modest) preliminary background knowledge (to be specified in a while) and who desires to become familiar in a comprehensible way with this interesting, important and living subject, which penetrates increasingly into various branches of modem theoretical physics, "pure" mathematics itself, as well as into its numerous applications.

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内容概要

微分几何在现代理论物理和应用数学中扮演着越来越重要的角色。
本书给出了在理论物理和应用数学中很重要的几何知识的引入，包括，流形、张量场、微分形式、联络、辛几何、李群作用、族以及自旋。
本书以一种非正式的形式写作，作者给出了1000多例子重在强调对一般理论的深刻理解。
本书将要为读者很好的学习拉格郎日现代处理方法、哈密顿力学、电磁、规范场，相对论以及万有引力做充足的准备。
本书很适合作为物理、数学以及工程专业的高年级本科生以及研究生的教程，也是一本很难得自学教程。

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书籍目录

PrefaceIntroduction1 The concept of a manifold2 Vector and tensor fields3 Mappings of tensors induced by mappings of manifolds4 Lie derivative5 Exterior algebra6 Differential calulus of forms7 Integral calculus of forms8 Particular cases and applications of Stokes'theorem9 Poincare lemma and cohomologies10 Lie groups:basic facts11 Differential geometry on Lie groups12 Representations of Lie groups and Lie algebras13 Actions of Lie groups and Lie algebras on manifolds14 Hamiltonian mechanics and symplectic manifolds15 Parallel transport and linear connection on M16 Field theory and the language of forms17 Differential geometry on T M and T*M18 Hamiltonian and Lagrangian equations19 Linear connection and the frame bundle20 Connection on a principal G-bundle21 Gauge theories and connections22 Spinor fields and the Dirac operatorAppendix A Some relevant algebrai structuresAppendix B Starring

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