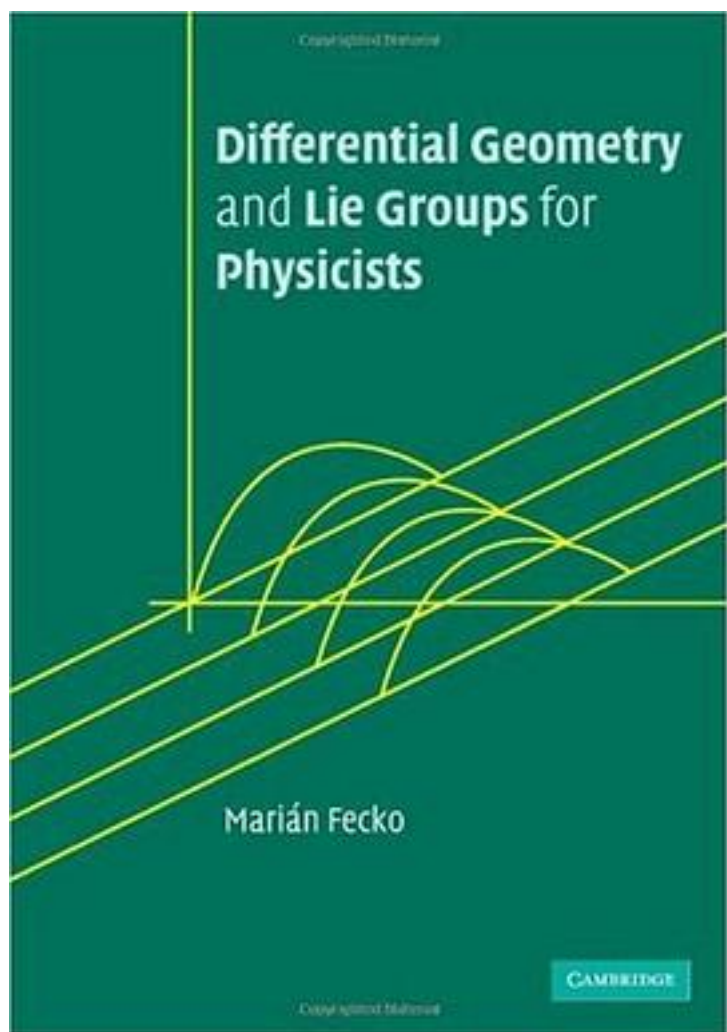


# Differential Geometry and Lie Groups for Physicists



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Differential geometry plays an increasingly important role in modern theoretical

physics and applied mathematics. This 2006 textbook gives an introduction to geometrical topics useful in theoretical physics and applied mathematics, covering: manifolds, tensor fields, differential forms, connections, symplectic geometry, actions of Lie groups, bundles, spinors, and so on. Written in an informal style, the author places a strong emphasis on developing the understanding of the general theory through more than 1000 simple exercises, with complete solutions or detailed hints. The book will prepare readers for studying modern treatments of Lagrangian and Hamiltonian mechanics, electromagnetism, gauge fields, relativity and gravitation. Differential Geometry and Lie Groups for Physicists is well suited for courses in physics, mathematics and engineering for advanced undergraduate or graduate students, and can also be used for active self-study. The required mathematical background knowledge does not go beyond the level of standard introductory undergraduate mathematics courses.

作者介绍:

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## 标签

微分几何

数学

physicists

物理

数学物理

微分几何7

lie

groups

## 评论

1000多道习题。。。正文穿插在习题里。。。虽然题目认真一想都很水，但是这绝对是把人推到河里学游泳的典范

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这书现在看的话是不推荐了。内容庞杂适合当字典，可是因为习题穿插其中完全没法作为字典使用。这种 for physicists 的数学书往往意味着有许多地方不严格证明但是用的语言极端范畴化显得很现代（比许多货真价实的数学书都现代，因为要写的简洁），看起来很高大上并增加了额外的阅读难度——甚至比直接读数学书还难——却没什么卵用。对于物理学生，比起学习更多结论，更重要的是连接起数学和物理两边的语言和记号，因为很多数学上的结论在物理上是十分trivial的推论根本不用学你也“懂”，可是这本书做不到这点。

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就如評論所說，正文跟習題完全分不開，對於懶癌患者這是相當重要的。但一點詳細操作的例子都沒有，單靠這本書自學幾乎是不可能的。不贊同評論的地方：書中給出了幾個學習路線可自行選擇最短路徑前往規範場，符號列表藏在書最後。

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## 书评

稍微读过前14章, 我现在列一下优缺点:

- 1.符号不是很好，泛函不用中括号，搞得人很迷糊。也没有符号列表。
- 2.严格性欠缺一点（也可以说是一个优点，拜此所赐，我看得很流畅）
- 3.pullback的定义有点含糊，这个定义极端重要，参考Nakahara或Hassani。
- 4.没有例题，我果然是还是喜...

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