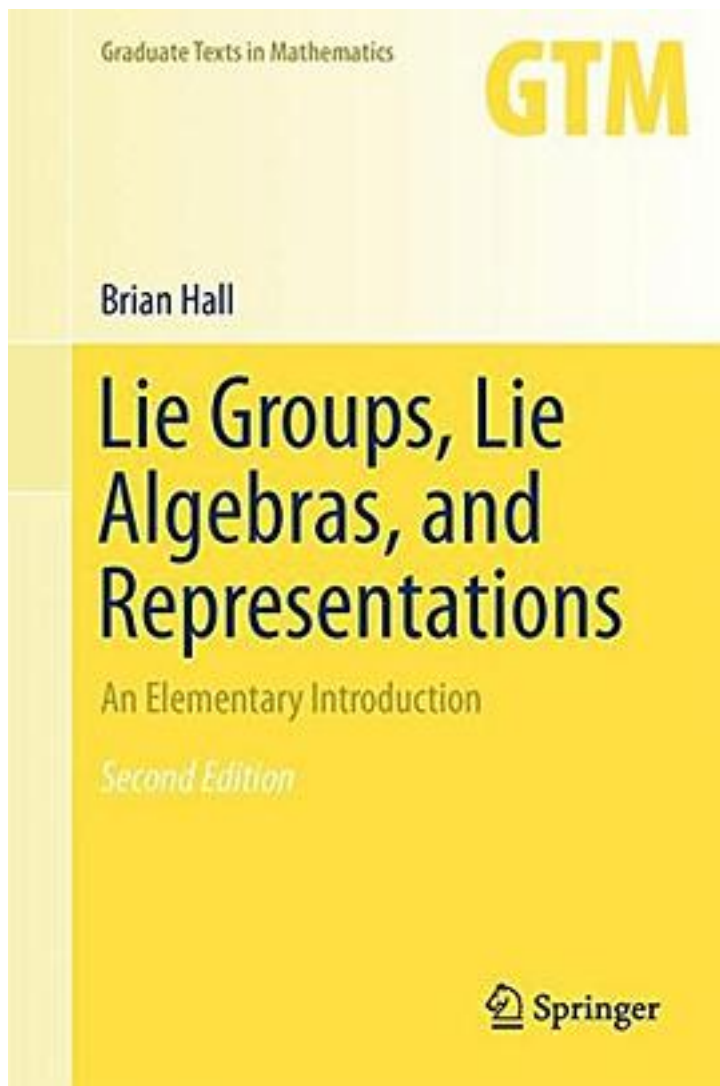


# Lie Groups, Lie Algebras, and Representations



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著者:Brian C. Hall

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Lie groups, Lie algebras, and representation theory are the main focus of this text. In order to keep the prerequisites to a minimum, the author restricts attention to matrix Lie groups and Lie algebras. This approach keeps the discussion concrete, allows the reader to get to the heart of the subject quickly, and covers all of the most interesting examples. The book also introduces the often-intimidating machinery of roots and the Weyl group in a gradual way, using examples and representation theory as motivation. The text is divided into two parts. The first covers Lie groups and Lie algebras and the relationship between them, along with basic representation theory. The second part covers the theory of semisimple Lie groups and Lie algebras, beginning with a detailed analysis of the representations of  $SU(3)$ . The author illustrates the general theory with numerous images pertaining to Lie algebras of rank two and rank three, including images of root systems, lattices of dominant integral weights, and weight diagrams. This book is sure to become a standard textbook for graduate students in mathematics and physics with little or no prior exposure to Lie theory. Brian Hall is an Associate Professor of Mathematics at the University of Notre Dame.

作者介绍:

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标签

数学

李群

Algebra

群论

李代数

代数

物理

抽象代数7

## 评论

没看完，暂时不看了，至于将来是否会补完不是很确定，毕竟李群教材有很多。书本身不错。整本书的讲法上，因为对象是矩阵李群，有点过于具体，有好处也有坏处，看个人需求吧。

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讲得比较浅显, 可以作为入门教材. 附录写得也很好

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入门，那学期踢掉了一堆应用的课，开心啊

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以矩阵为例讲李群李代数，非常直观清晰，是一本很好的入门书，但是过于数学化，不知道如何用于物理，这是GTM的通病，毕竟人家是写给学数学的人看的。

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## 书评

对于一个关心对称函数，关心表示论的组合方向的人来说，这本书有着致命的诱惑。最早发现这本书是在网上看到它的先行版本，只有100多页，现在的书加上附录有三百多页，新版更厚。  
诱惑的原因，是这本书试图躲开分析的影子，也就是丢掉一般性的，流形上的方法来讨论矩阵Lie群。...

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