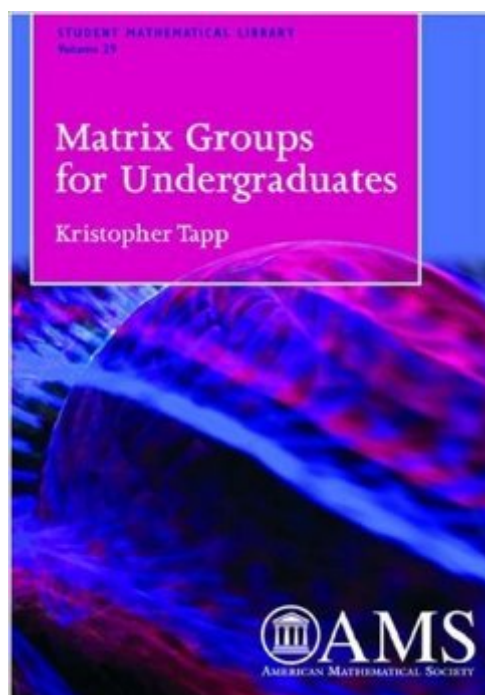


The book was found

Matrix Groups For Undergraduates (Student Mathematical Library,)



Synopsis

Matrix groups are a beautiful subject and are central to many fields in mathematics and physics. They touch upon an enormous spectrum within the mathematical arena. This textbook brings them into the undergraduate curriculum. It is excellent for a one-semester course for students familiar with linear and abstract algebra and prepares them for a graduate course on Lie groups. *Matrix Groups for Undergraduates* is concrete and example-driven, with geometric motivation and rigorous proofs. The story begins and ends with the rotations of a globe. In between, the author combines rigor and intuition to describe basic objects of Lie theory: Lie algebras, matrix exponentiation, Lie brackets, and maximal tori. The volume is suitable for graduate students and researchers interested in group theory.

Book Information

Series: Student Mathematical Library (Book 29)

Paperback: 166 pages

Publisher: American Mathematical Society (June 13, 2005)

Language: English

ISBN-10: 0821837850

ISBN-13: 978-0821837856

Product Dimensions: 0.5 x 5.5 x 8.2 inches

Shipping Weight: 8 ounces (View shipping rates and policies)

Average Customer Review: 4.4 out of 5 stars [See all reviews](#) (7 customer reviews)

Best Sellers Rank: #883,981 in Books (See Top 100 in Books) #54 in [Books > Science & Math > Mathematics > Matrices](#) #124 in [Books > Science & Math > Mathematics > Pure Mathematics > Group Theory](#) #8391 in [Books > Textbooks > Science & Mathematics > Mathematics](#)

Customer Reviews

It's true as the other reviewers have said: this is an exceptionally good introduction to Lie groups and Lie algebras via matrix groups. It's also suitable for self-study provided you have the required math background. Although it's very much in the definition-theorem-proof mode, there's plenty of insightful and well-written exposition motivating the formal development. My only complaint is that there are no solutions to any exercises and even worse, the proofs of a number of propositions are left to the reader. This detracts from the value of the book for self-study, but not too much because on balance, in my view, the sheer excellence of the presentation pretty much makes up for that all too common "sin of omission". The book is extremely concise: only about 137 small pages excluding

exercises (no solutions) and back matter. To illustrate: in the chapter (pp. 5-20), one rapidly covers fields and skew-fields (pp. 7-8), quaternions (pp 8-9); the real, complex and quaternion skew-field inclusions (p. 10); matrices as linear transformations (pp. 15-16); general linear groups (pp. 17-18); and finally, change of basis via conjugation (pp. 18-20). In its entirety, the book covers, in the same no-nonsense way: Ch 1. Matrices, Ch. 2 All matrix groups are real matrix groups, Ch. 3 The orthogonal groups, Ch 4. The topology of matrix groups, Ch 5. Lie algebras, Ch 6. Matrix exponentiation, Ch. 7 Matrix groups as manifolds, Ch 8. The Lie bracket, Ch 9. Maximal tori. And, as another reviewer pointed out, the author's AMS website has a free download, Ch 10. Roots, and an errata sheet.

[Download to continue reading...](#)

Matrix Groups for Undergraduates (Student Mathematical Library,) Transformation Groups for Beginners (Student Mathematical Library, Vol. 25) (Student Mathematical Library, V. 25) Frames for Undergraduates (Student Mathematical Library) Elementary Algebraic Geometry (Student Mathematical Library, Vol. 20) (Student Mathematical Library, V. 20) Groups, Graphs and Trees: An Introduction to the Geometry of Infinite Groups (London Mathematical Society Student Texts) Groups and Symmetries: From Finite Groups to Lie Groups (Universitext) Galois Theory for Beginners: A Historical Perspective (Student Mathematical Library) (Student Mathematical Library) The Essential Guide to the ACT Matrix: A Step-by-Step Approach to Using the ACT Matrix Model in Clinical Practice A Survey of Matrix Theory and Matrix Inequalities (Dover Books on Mathematics) Groups and Their Graphs (New Mathematical Library 14) Talking About Leaving: Why Undergraduates Leave The Sciences A Path to Combinatorics for Undergraduates: Counting Strategies Matrix Computations (Johns Hopkins Studies in the Mathematical Sciences) Representations of Algebraic Groups (Mathematical Surveys and Monographs) Algebraic Geometry: A Problem Solving Approach (Student Mathematical Library) Harmonic Analysis: From Fourier to Wavelets (Student Mathematical Library) Lectures on Generating Functions (Student Mathematical Library, V. 23) Ramsey Theory on the Integers (Student Mathematical Library) Mathematics++: Selected Topics Beyond the Basic Courses (Student Mathematical Library) Elementary Cryptanalysis: A Mathematical Approach (Mathematical Association of America Textbooks)

[Dmca](#)