

Lie groups

1. Matrices
2. Matrix groups as real matrix groups
3. The orthogonal groups
4. The topology of matrix groups
5. Lie algebras
6. Matrix exponentiation
7. Matrix groups as manifolds
8. The Lie bracket
9. Maximal tori
10. The geometry of compact Lie groups

Literature:

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2. Baker, A.: Matrix Groups (An Introduction to Lie Group Theory), 2001
3. Rossmann, W.: Lie Groups (An Introduction through Linear Groups), 2002
4. Tapp, K.: Matrix Groups for Undergraduates, 2005