Chevalley, Claude

Theory of Lie groups. Reprint of the 1946 original published by Princeton University Press. (English) [Zbl 1422.22001]


Publisher’s description: Suitable for advanced undergraduate and graduate students of mathematics, this enduringly relevant text introduces the main basic principles that govern the theory of Lie groups. The treatment opens with an overview of the classical linear groups and of topological groups, focusing on the theory of covering spaces and groups, which is developed independently from the theory of paths.

Succeeding chapters contain an examination of the theory of analytic manifolds as well as a combination of the notions of topological group and manifold that defines analytic and Lie groups. An exposition of the differential calculus of Cartan follows and concludes with an exploration of compact Lie groups and their representations.

See the review of the 15th printing of the 1946 original in [Zbl 0946.22001]. For the reviews of the French editions see [Zbl 0054.01303; Zbl 0186.33104].

MSC:

22-01 Introductory exposition (textbooks, tutorial papers, etc.) pertaining to topological groups
22E15 General properties and structure of real Lie groups
22C05 Compact groups

Keywords:
classical group; Lie groups; Lie algebras; topological group; manifold; analytic group; compact group; representation