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图书基本信息

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内容概要

For this printing， I have corrected some errors and made numerous minor changes in the interest of clarity. The most significant corrections occur in Sections 4.2， 4.3， 5.5， 30.3， 32.1， and 32.3. I have also updated the biblio-graphy to some extent. Thanks are due to a number of readers who took the trouble to point out errors， or obscurities; especially helpful were the detailed comments of Jose Antonio Vargas.

书籍目录

章节摘录

Over the last two decades the Borel-Chevalley theory of Iinear algebraic groups（as further developed by Borel，Steinberg，Tits，and others）has made possible significant progress In a aurabef of areas：scmisimple Lie groups and arithmetic subgroups，p-adic groups，classical linear groups，finite simple groups，invariant theory。
etc.Unfortunately，the subject has not been as accessible as it ought to be.in part due to the fairly substantial background in algebraic geometry assumed by Chevalley，Borei，Borel，Tits .The dificulty of the theory also stems in Dart from the fact that the main results culminate a Iong series of arguments which are hard to“ see through ”from beginning to end.In writing this introductory text. aimed at the second year graduate level.I have tried to take these factors into account. First.the requisite algebraic geometry has been treated in fullin Chapter I.modulo some more.or-less standard results from commutative algebra （quoted in § o），e.g.，the theorem that a regular local ring is an integrally closed domain.The treatment is intentionally somewhat crude and is not at all scheme-oriented.In fact.everything is done over an algebraically closed field K（of arbitrary characteristic）.even though most of the eventual applications involve a feld of definition k.I believe this c.an be iustified as follows.In order to work over k from the outset，it would be necessary to spend a good deal of time perfecting the foundations.and then the only rationality statements proved along the way would be Of a minor sort rcf （34.2）.The deeper rationality properties can only be appreciated after the reader has reached Chapter X.（A survey of such results，without proofs，is given in Chapter XlI.） Second.a special effort has been made to render the exposition trans. parent.Except for a digression into characteristic 0 in Chapter V.the development from Chapter II to Chapter XI is fairly“ linear ”.covering the foundations，the structure of connected solvable groups，and then the structure，representations and classification of reductive groups.The Iecture notes of BoreI 41，which constitute an improvement of the methods in Chevalley，are the basic source for Chapters II-IV，Vl-X，while Chapter xI is a hybrid of Chevalley and SGAD.From27 on the basic facts about root systems arc used constantly：these are listed（with suitable ref- erences）in the Appendix.Apart from{io，the Appendix，and a reference to a theorem of Burnside in（1 7.5），the text iS self-contained.But the reader is asked to verifv some minor ooints as exercises. ……