<<概型的几何>>

图书基本信息

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内容概要

概型理论是代数几何的基础，在代数几何的经典领域不变理论和曲线模中有了较好的发展。
将代数数论和代数几何有机的结合起来，实现了早期数论学者们的愿望。
这种结合使得数论中的一些主要猜测得以证明。
　本书旨在建立起经典代数几何基本教程和概型理论之间的桥梁。
例子讲解详实，努力挖掘定义背后的深层次东西。
练习加深读者对内容的理解。
学习本书的起点低，了解交换代数和代数变量的基本知识即可。
本书揭示了概型和其他几何观点，如流形理论的联系。
了解这些观点对学习本书是相当有益的，虽然不是必要。
目次：基本定义；例子；射影概型；经典结构；局部结构；概型和函子。

书籍目录

章节摘录

1.4 The Functor of PointsOne of the intriguing things about schemes is precisely that they have somuch structure that is not conveyed by their underlying sets, so that thefamiliar operations on sets such as taking direct products require vigilantscrutiny lest they turn out not to make sense. It is therefore remarkable thatmany of the set-theoretic ideas can be restored through a simple device,the functor of points. This point of view, while initially adding a layer ofcomplication to the subject, is often extremely illuminating; as a result itand its attendant terminology have become pervasive. We will give a briefintroduction to the necessary definitions here and use them occasionally inthe following chapters before returning to them in detail in Chapter VI.　　We start with the observation that the points Of a scheme do not ingeneral look anything like one another: we have nonclosed points as well asclosed ones; and if we are working over a non-algebraically closed field, theneven closed points may be distinguished by having different residue fields.Similarly, if we are working over Z, different points may have residue fieldsof different characteristic; and if we extend the notion of point to "closedsubscheme whose underlying topological space is a point," we have an evengreater variety. And, of course, a morphism between schemes will not at allbe determined by the associated map on underlying point sets.　　There is, however, a way of looking at a scheme——via its functor ofpoints- that reduces it in effect to a set. More precisely, we may think ofa scheme as an organized collection of sets, a functor on the category ofschemes, on which the familiar operations on sets behave as usual. In thissection we will examine this functorial descripti　　n. A big payoff is that wewill see the category of schemes embedded in a larger category of functors,in which many constructions are much easier. The advantage of this issomething like the advantage in analysis of working with distributions, notjust ordinary functions; it shifts the problem of making constructions inthe category of schemes to the problem of understanding which functorscome from schemes. Further, many geometric constructions that arise inthe category of schemes can be extended to larger categories of functors ina useful way.

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