Foreword

This book is an outgrowth of the twelfth Summer Mathematical Institute of the American Mathematical Society, which was devoted to Algebraic Groups and Discontinuous Subgroups. The Institute was held at the University of Colorado in Boulder from July 5 to August 6, 1965, and was financed by the National Science Foundation and the Office of Naval Research. The present volume consists of the Institute lecture notes, in part slightly revised, and of a few papers written somewhat later.

From the beginning, it was understood that a comprehensive exposition of the arithmetic aspects of algebraic groups should be a central aim of the Institute. In order to survey effectively the topics chosen for discussion, some important parts of the theory of Lie groups and algebraic groups had to be omitted, and the program was concentrated around five major themes: linear algebraic groups and arithmetic groups, adèles and arithmetic properties of algebraic groups, automorphic functions and spectral decomposition of L^2-spaces of coset spaces, holomorphic automorphic functions on bounded symmetric domains and moduli problems, vector valued cohomology and deformation of discrete subgroups. The lectures fulfilled diverse needs, and accordingly the papers in this book are intended to serve various purposes: to supply background material, to present the current status of a topic, to describe some basic methods, to give an exposition of more or less known material for which there is no convenient reference, and to present new results. It is hoped that this collection of papers will facilitate access to the subject and foster further progress.

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