

In all the years that these newer phenomena were being discovered, people also continued working on more direct generalizations and refinements of the classical limit theorems listed in the first paragraph. Petrov's book is almost exclusively concerned with these refinements. The book stresses the situation where the independent summands are not necessarily identically distributed, an area to which Petrov himself has made significant contributions. After a derivation of the classical limit laws the book gives an excellent survey (up till 1972, the date of the publication of the Russian edition) of error estimates, asymptotic expansions, local limit theorems and large deviation estimates, all for the case of a normal limit law in one dimension. The last two chapters give conditions for the laws of large numbers and the law of the iterated logarithm. Each chapter ends with a supplement, listing (with references) technical results which should be of particular interest to experts. Since much of the recent work in all these areas is not easily accessible to western readers, the book provides a welcome service. Even though the reviewer's preferences are more in the direction of the newer aspects of sums of independent random variables, one should not undervalue the refined versions of the classical limit theorems. Many of the proofs require tremendous skill in classical analysis, especially Fourier analysis, and many of the results, such as the Berry-Esseen estimate, the Edgeworth expansion and asymptotic results for large deviations, are important for statistics and theoretical purposes.

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*Mathematical developments arising from Hilbert problems*, edited by Felix E. Browder, Proc. Sympos. Pure Math., vol. 28, American Mathematical Society, Providence, Rhode Island, 1976, xii + 628 pp., \$37.60.

To begin this review I move a vote of thanks: to the AMS, to the organizing committee of the May, 1974 De Kalb symposium on Hilbert's problems (Bateman (Secretary), Browder (Chairman), Buck, Lewis, Zelinsky), and to all the authors. Admirers of Hilbert and his problems, a set which must be nearly identical with the set of mathematicians, will lovingly place the book on their shelves (as soon as their orders are filled).

Some readers may be curious concerning what was previously available by way of a survey of Hilbert's problems. Since these references do not appear in the present book, I shall furnish them here. Bieberbach [1] surveyed the status of the problems in 1930, as did Demidov [2] in 1966. In 1969 the Russian survey [6] appeared, followed by a translation into German [7]. There is a survey in Japanese by Sin Hitotumatu. Until now the only account in English was that of Fang [3]. There is some biographical information concerning Hilbert's talk on the problems in [8] and [9].

Browder's preface asserts that the main thrust of the symposium was not toward the history of the problems and their current status but rather toward