

Springer

1st  
edition1st ed. 2019, XVIII, 581 p.  
36 illus.**Printed book**

Hardcover

**Printed book**

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ISBN 978-3-030-00310-4

£ 109,99 | CHF 153,50 | 129,99 € |  
142,99 € (A) | 139,09 € (D)

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**Mathematics : Information and Communication, Circuits**

Ahlswede, Rudolf, Ahlswede, A., Althöfer, I., Deppe, C., Tamm, U. (Eds.)

# Probabilistic Methods and Distributed Information

Rudolf Ahlswede's Lectures on Information Theory 5

- Presents Rudolf Ahlswede's lecture on arbitrarily varying channels (AVC), on which he was the world's leading expert, appended by a survey of recent results
- Includes discussions on a variety of topics related to distributed information, among them "multiple descriptions" and "network coding"
- Can be used as the basis for courses

The fifth volume of Rudolf Ahlswede's lectures on Information Theory focuses on several problems that were at the heart of a lot of his research. One of the highlights of the entire lecture note series is surely Part I of this volume on arbitrarily varying channels (AVC), a subject in which Ahlswede was probably the world's leading expert. Appended to Part I is a survey by Holger Boche and Ahmed Mansour on recent results concerning AVC and arbitrarily varying wiretap channels (AVWC). After a short Part II on continuous data compression, Part III, the longest part of the book, is devoted to distributed information. This Part includes discussions on a variety of related topics; among them let us emphasize two which are famously associated with Ahlswede: "multiple descriptions", on which he produced some of the best research worldwide, and "network coding", which had Ahlswede among the authors of its pioneering paper. The final Part IV on "Statistical Inference under Communication constraints" is mainly based on Ahlswede's joint paper with Imre Csiszar, which received the Best Paper Award of the IEEE Information Theory Society. The lectures presented in this work, which consists of 10 volumes, are suitable for graduate students in Mathematics, and also for those working in Theoretical Computer Science, Physics, and Electrical Engineering with a background in basic Mathematics. The lectures can be used either as the basis for courses or to supplement them in many ways. Ph.D.

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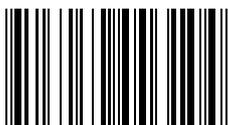
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ISBN 978-3-030-00310-4 / BIC: PBW / SPRINGER NATURE: SCM13038

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