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BOOK REVIEWS

Bognár, M.: FOUNDATIONS OF LINKING THEORY. Akadémiai Kiadó, Budapest 1992, 164 pp. ISBN 963 05 6264 2

The author's aim is to develop an axiomatic theory of linking for partially exact homology theories which are defined on the category of compact pairs.

A so called small linking theory is defined in terms of a bihomomorphism $\widetilde{H}_t(N) \times \widetilde{H}'_{t'}(N') \longrightarrow A$, where $t + t' = n - 1$, $\widetilde{H}$, $\widetilde{H}'$ are reduced homology theories, A is an abelian group and N, N' are disjoint compact subsets of $\mathbb{R}^n$. It is shown that if such a theory is given on linked spheres S and S' in $\mathbb{R}^n$, with $\dim S + \dim S' = n - 1$, then that theory has a unique extension to pairs of disjoint compact subsets of $\mathbb{R}^n$.

On the other hand, a so called big linking theory is then introduced in order to establish a connection between small linking theories for different dimensions t, t' (such that $t+t' = n - 1$) and between linking theories in euclidean spaces of different dimensions n.

As the main application of the small linking theory, a new formulation and a new proof of the Brouwer-Aleksandrov Decomposition Theorem are given.

It should be mentioned that the book is based on author's papers [mainly Dokl. Akad. Nauk SSSR 203 (1972), 986–988, and Acta Math. Hung. 49 (1987), 3–28] and is not devoted to linking phenomena currently intensively studied in geometric topology.

There are several minor slips and misprints. For example, on page 12, the manifolds M_1, M_2 in the definition of their integral linking coefficient should be taken oriented. As another example we note that (see page 110) one cannot correctly say: "For any $m \in \mathbb{Z}$ let $\overline{m}^p$ be the subset of Z_p containing m."

The chapter headings are:

Chapter 1. Fundamental properties of the linking theory;

Chapter 2. Proof of the uniqueness theorem of the small linking theory;

Chapter 3. Proof of the existence theorem of the small linking theory;

Chapter 4. Big linking theory;

Chapter 5. p-linking theories;

Chapter 6. Geometric applications.

The book is accessible to readers having some background in homology theories.

Július Korbaš, Bratislava

Riečan, B. – Lamoš, F. – Lenárt, C.: PRAVDEPODOBNOSŤ A MATEMATICKÁ ŠTATISTIKA (SLovak). [PROBABILITY AND MATHEMATICAL STATISTICS.] (2nd edition) Alfa, Bratislava 1992, 317 pp. ISBN 80-05-00654-3

The aim of the authors was to give to pedagogues a selfcontained, clear and logical elaborated theory which will be used in their didactic practice. The book is devoted mainly to students of pedagogical faculties with main subject mathematics.

The book consist of eleven chapters, tables and the subject index.

Chapters:

1. Elementary probability and statistics (pp. 11–36)
2. Foundations of the axiomatic probability theory (pp. 37–59)
3. Characteristic functions (pp. 60–84)
4. Limit theorems (pp. 85–120)
5. Descriptive statistics and sampling methods (pp. 121–165)
6. Foundations of estimation theory (pp. 166–200)
7. Testing statistical hypotheses (pp. 201–227)
8. Random vectors (pp. 228–241)
9. Linear regression (pp. 242–252)
10. Appendix I. Mean value (pp. 253–274)
11. Appendix II. Convolution (pp. 275–294)

Examples which should be solved by readers are given at the end of each chapter. They are thoroughly chosen and can serve either to lectures as a help, or to students for individual study.

The tables contain quantiles of the normal distribution, critical values of the chi-square, the Student and the Fisher-Snedecor distributions and the critical values for the sign test, one sample Wilcoxon and two samples Wilcoxon tests.

The style of the book demonstrates the great didactic experience of the authors and not only students but also experts in probability and mathematical statistics will enjoy to read the book.

It can be recommended to everybody who wants to be familiar with the mathematical foundations of probability and statistics.

Lubomír Kubáček, Bratislava