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★Geometrische Modelle zur Analyse empirischer Daten. (German) [[Geometric models for the analysis of empirical data]]

Akademie-Verlag, Berlin, 1979. 255 pp. MDN 48.00.

The topic of this monograph can approximately be described as representing data matrices by suitable points in an appropriate Euclidean space. This leads to minimization problems of the kind $\min_{T \in A, D \in B} L(T, D)$, where L is a distance between the matrices T and D , A is a polyhedral set (isotonic regression of a data matrix S) while the set B is in general more complicated. The numerical techniques for solving the diverse optimization problems form the larger part of the book. The methodological aspects of the field are discussed more intensively than possible applications in psychology and sociology. The monograph does not contain any computer programs but the bibliography is comprehensive. It does not seem to contain new results, but gives a good survey of the field, sometimes also called the analysis of soft data.

The first chapter discusses several kinds of data matrices (preference, profile, proximity, dominance matrices) and the famous Young-Householder theorem. The remaining chapters are as follows: Chapters 2 and 3. Nonmetric multidimensional and nondimensional analysis of proximity data; Chapter 4. Nonmetric factor analysis of profile data; Chapter 5. Nonmetric multidimensional unfolding; Chapter 6. Nonmetric multidimensional scaling of individual differences; Chapter 7. General nonmetric algorithms; Chapter 8. Selected metric methods.

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