D. Khoshnevisan: Multiparameter Processes. An Introduction to Random Fields. (Springer Monographs in Mathematics.) Springer, Berlin, Heidelberg, New York, 2002, XIX+584 S. ISBN 0-387-95459-7 H/b 94,95.

The first systematic treatment of the theory of stochastic processes was given by Doob in his classical book "Stochastic processes" of 1953. Since then, most research in this subject was influenced by this book. Doob already noted that multivariate generalizations of his results were very useful in the theory of probability as well as in practical applications. In the last 40 years, there appeared many papers on multivariate (multiparameter) processes, frequently also called random fields. However, so far no book was entirely devoted to this topic. The present book is the first one presenting a general treatment of random fields. Since the appearance of Doob's book, it has been known that the theory of martingales is the most important tool in the theory of stochastic processes. Hence, it is natural to ask about multiparameter martingales. An essential part of the book under review is devoted to this question.

The book is divided into two parts: I Discrete-parameter random fields, II Continuous-parameter random fields. Both parts span the area from the most classical results up to recent research.
The book can be recommended not only to probabilists but to anyone interested in the applications of probability within other areas of mathematics, particularly in analysis.

P. Révész (Wien)