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Descrizione fisica	1 online resource (451 pages)
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Soggetti	Nonparametric statistics Process control - Statistical methods
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Livello bibliografico	Monografia
Nota di contenuto	Background/review of statistical concepts -- Basics of statistical process control -- Parametric univariate variables control charts -- Nonparametric (distribution-free) univariate variables control charts -- Miscellaneous univariate distribution-free (nonparametric) variables control charts.
Sommario/riassunto	A unique approach to understanding the foundations of statistical quality control with a focus on the latest developments in nonparametric control charting methodologies Statistical Process Control (SPC) methods have a long and successful history and have revolutionized many facets of industrial production around the world. This book addresses recent developments in statistical process control bringing the modern use of computers and simulations along with theory within the reach of both the researchers and practitioners. The emphasis is on the burgeoning field of nonparametric SPC (NSPC) and the many new methodologies developed by researchers worldwide that are revolutionizing SPC. Over the last several years research in SPC, particularly on control charts, has seen phenomenal growth. Control charts are no longer confined to manufacturing and are now applied for process control and monitoring in a wide array of applications, from education, to environmental monitoring, to disease mapping, to crime

prevention. This book addresses quality control methodology, especially control charts, from a statistician’s viewpoint, striking a careful balance between theory and practice. Although the focus is on the newer nonparametric control charts, the reader is first introduced to the main classes of the parametric control charts and the associated theory, so that the proper foundational background can be laid. Reviews basic SPC theory and terminology, the different types of control charts, control chart design, sample size, sampling frequency, control limits, and more Focuses on the distribution-free (nonparametric) charts for the cases in which the underlying process distribution is unknown Provides guidance on control chart selection, choosing control limits and other quality related matters, along with all relevant formulas and tables Uses computer simulations and graphics to illustrate concepts and explore the latest research in SPC Offering a uniquely balanced presentation of both theory and practice, Nonparametric Methods for Statistical Quality Control is a vital resource for students, interested practitioners, researchers, and anyone with an appropriate background in statistics interested in learning about the foundations of SPC and latest developments in NSPC.