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Titolo	Soft Modeling in Industrial Manufacturing / / edited by Przemyslaw Grzegorzewski, Andrzej Kochanski, Janusz Kacprzyk
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ISBN	3-030-03201-9
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (200 pages)
Collana	Studies in Systems, Decision and Control, , 2198-4182 ; ; 183
Disciplina	658.8
Soggetti	Computational intelligence Engineering mathematics Industrial engineering Production engineering Computational Intelligence Engineering Mathematics Industrial and Production Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Data and modeling in industrial manufacturing -- From data to reasoning -- Data preprocessing in industrial manufacturing -- Tool condition monitoring in metal cutting -- Assessment of selected tools used for knowledge extraction in industrial manufacturing -- Application of data mining tools in shrink sleeve labels converting process -- Study of thickness variability of the oorboard surface layer -- Applying statistical methods with imprecise data to quality control in cheese manufacturing -- Monitoring series of dependent observations using the sXWAM control chart for residuals -- Diagnosis of out-of-control signals in complex manufacturing processes.
Sommario/riassunto	This book discusses the problems of complexity in industrial data, including the problems of data sources, causes and types of data uncertainty, and methods of data preparation for further reasoning in engineering practice. Each data source has its own specificity, and a characteristic property of industrial data is its high degree of uncertainty. The book also explores a wide spectrum of soft modeling

methods with illustrations pertaining to specific cases from diverse industrial processes. In soft modeling the physical nature of phenomena may not be known and may not be taken into consideration. Soft models usually employ simplified mathematical equations derived directly from the data obtained as observations or measurements of the given system. Although soft models may not explain the nature of the phenomenon or system under study, they usually point to its significant features or properties.