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Titolo	Smart Meter Data Analytics [[electronic resource]] : Electricity Consumer Behavior Modeling, Aggregation, and Forecasting / / by Yi Wang, Qixin Chen, Chongqing Kang
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Descrizione fisica	1 online resource (XXI, 293 p. 141 illus., 125 illus. in color.)
Disciplina	621.31
Soggetti	Energy policy Energy and state Power electronics Natural resources Energy Policy, Economics and Management Power Electronics, Electrical Machines and Networks Natural Resource and Energy Economics
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di contenuto	Overview for Smart Meter Data Analytics -- Smart Meter Data Compression Based on Load Feature Identification -- A Combined Data-Driven Approach for Electricity Theft Detection -- GAN-based Model for Residential Load Generation -- Ensemble Clustering for Individual Electricity Consumption Patterns Extraction -- Sparse and Redundant Representation-Based Partial Usage Pattern Extraction -- Data-Driven Personalized Price Design in Retail Market Using Smart Meter Data -- Deep Learning-Based Socio-demographic Information Identification -- Cross-domain Feature Selection and Coding for Household Energy Behavior -- Clustering of Electricity Consumption Behavior Dynamics Toward Big Data Applications -- Enhancing Short-term Probabilistic Residential Load Forecasting with Quantile LSTM -- An Ensemble Forecasting Method for the Aggregated Load With Subprofiles -- Prospects of Future Research Issues on Smart Meter Data Analytics.
Sommario/riassunto	This book aims to make the best use of fine-grained smart meter data

to process and translate them into actual information and incorporated into consumer behavior modeling and distribution system operations. It begins with an overview of recent developments in smart meter data analytics. Since data management is the basis of further smart meter data analytics and its applications, three issues on data management, i. e., data compression, anomaly detection, and data generation, are subsequently studied. The following works try to model complex consumer behavior. Specific works include load profiling, pattern recognition, personalized price design, socio-demographic information identification, and household behavior coding. On this basis, the book extends consumer behavior in spatial and temporal scale. Works such as consumer aggregation, individual load forecasting, and aggregated load forecasting are introduced. We hope this book can inspire readers to define new problems, apply novel methods, and obtain interesting results with massive smart meter data or even other monitoring data in the power systems.
