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Nota di contenuto	Development Characteristics of Tight Oil and Gas Reservoirs -- Flow and Recovery Mechanisms of Tight Oil and Gas Reservoirs -- Mathematical Model of Multiphase Flow in Multiple Media at Different Scales -- Discretization Technology of Unstructured Grid and Mathematical Model of Multiphase Flow in Multiple Media at Different Scales -- Geological Modeling Technology for Tight Reservoir with Discrete Multiplescale Multiple Media -- Numerical Simulation of Multiple Media at Different Scales -- Coupled Multiphase Flow-Geomechanics Simulation for Multiple Media with Different Sizes Pores and Natural/Hydraulic Fractures in Fracturing-Injection-Production Process -- Identification of Flow Regimes and Self-Adaption Simulation of Complex Flow Mechanisms in Multiple Media with Different Sizes Pores and Fractures -- Production Performance Simulation of Horizontal Well with Hydraulic Fracturing -- Generation and Solving technology of Mathematical Matrix for Multiple Media Based on Unstructured Grid -- Application of Numerical Simulation in the Development of Tight Oil/Gas reservoirs -- Trend and Prospects of Numerical Simulation Technology for Unconventional Tight Oil and Gas Reservoirs.
Sommario/riassunto	This book systematically introduces readers to the simulation theory and techniques of multiple media for unconventional tight reservoirs. It summarizes the macro/microscopic heterogeneities; the features of multiscale multiple media; the characteristics of complex fluid

properties; the occurrence state of continental tight oil and gas reservoirs in China; and the complex flow characteristics and coupled production mechanism under unconventional development patterns. It also discusses the simulation theory of multiple media for unconventional tight oil and gas reservoirs; mathematic model of flow through discontinuous multiple media; geological modeling of discrete multiscale multiple media; and the simulation of multiscale, multiphase flow regimes and multiple media. In addition to the practical application of simulation and software for unconventional tight oil and gas, it also explores the development trends and prospects of simulation technology. The book is of interest to scientific researchers and technicians engaged in the development of oil and gas reservoirs, and serves as a reference resource for advanced graduate students in fields related to petroleum. Professor Qiquan Ran has been involved in research on production geology, reservoir engineering, development planning, software development and development strategic planning for volcanic gas reservoirs and unconventional reservoirs. He has served as team leader on over 30 projects, including major projects, scientific research and decision-support projects for industry and technology research and service projects for oil fields. He also was the subject chief in the Major National Special Project “Safe development and utilization technology of natural gas reservoir containing CO2,” and the National 973 Project “The effective internal structure characteristics and the flow law of volcanic gas reservoirs.” Professor Ran has made significant innovative contributions in the field of development theory and technology for volcanic gas reservoirs, and pioneered advances in the corresponding theory and technology. As a chief expert and a team leader, Professor Ran completed the National 863 Project “Key technology and software development of numerical simulation of typical unconventional oil and gas reservoirs.” His research promotes the development of theory & technology of unconventional reservoir development and numerical simulation. He has received 26 awards for science and technology achievements, including 8 first prizes at the provincial level. Professor Ran has published 10 books and over 105 papers, and holds 8 patents and 34 software copyrights.