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Titolo	Realistic Simulation of Financial Markets : Analyzing Market Behaviors by the Third Mode of Science / / edited by Hajime Kita, Kazuhisa Taniguchi, Yoshihiro Nakajima
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Collana	Evolutionary Economics and Social Complexity Science, , 2198-4204 ; ; 4
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Part I U-Mart System: The first test bed of the Third Mode of Science -- 1 A Guided Tour of the Backside of Agent-Based Simulation -- 2 Research on ABS and Artificial Market -- 3 Building Artificial Markets for Evaluating Market Institutions and Trading Strategies -- 4 A Perspective on the Future of the Smallest Big Project in the World -- Part II Applications of Artificial Markets -- 5 Evolution of Day Trade Agent Strategy by means of Genetic Programming with Machine Learning -- 6 How to Estimate Market Maker Models in an Artificial Market -- 7 The Effect of Resilience in Optimal Execution with Artificial Market Approach -- 8 Observation of Trading Process, Exchange, and Market -- Index.
Sommario/riassunto	This book takes up unique agent-based approaches to solving problems related to stock and their derivative markets. Toward this end, the authors have worked for more than 15 years on the development of an artificial market simulator called U-Mart for use as a

research and educational tool. A noteworthy feature of the U-Mart simulator compared to other artificial market simulators is that U-Mart is an ultra-realistic artificial stock and their derivative market simulator. For example, it can simulate “arrowhead,” a next-generation trading system used in the Tokyo Stock Exchange and other major markets, as it takes into consideration the institutional design of the entire market. Another interesting feature of the U-Mart simulator is that it permits both human and computer programs to participate simultaneously as traders in the artificial market. In this book, first the details of U-Mart are explained, enabling readers to install and run the simulator on their computers for research and educational purposes. The simulator thus can be used for gaming simulation of the artificial market and even for users as agents to implement their own trading strategies for agent-based simulation (ABS).The book also presents selected research cases using the U-Mart simulator. Here, topics include automated acquisition of trading strategy using artificial intelligence techniques, evaluation of a market maker system to treat thin markets such as those for small and regional businesses, systemic risk analysis of the financial market considering institutional design of the market, and analysis of how humans behave and learn in gaming simulation. New perspectives on artificial market research are provided, and the power, potential, and challenge of ABS are discussed. As explained in this important work, ABS is considered to be an effective tool as the third approach of social science, an alternative to traditional literary and mathematical approaches.