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Titolo	Cell Mapping Methods : Algorithmic Approaches and Applications / / by Jian-Qiao Sun, Fu-Rui Xiong, Oliver Schütze, Carlos Hernández
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Descrizione fisica	1 online resource (XV, 226 p. 98 illus., 70 illus. in color.)
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Nota di contenuto	Introduction -- Dynamical Systems -- Simple Cell Mapping -- Generalized Cell Mapping -- Hybrid Cell Mapping and Subdivision -- Post-Processing of Simple Cell Mapping -- Application-Global Analysis of Nonlinear Dynamical Systems -- Application-Finding Zeros of Nonlinear Algebraic Functions -- Application-Multi-Objective Optimization.
Sommario/riassunto	This book presents the latest algorithmic developments in the cell-mapping method for the global analysis of nonlinear dynamic systems, global solutions for multi-objective optimization problems, and global solutions for zeros of complex algebraic equations. It also discusses related engineering and scientific applications, including the nonlinear design of structures for better vibration resistance and reliability; multi-objective, structural-acoustic design for sound abatement; optimal multi-objective design of airfoils for better lift; and optimal multi-objective design of linear and nonlinear controls with or without time delay. The first book on the subject to include extensive Matlab and C++ codes, it presents various implementation algorithms of the cell-mapping method, enabling readers to understand how the method

works and its programming aspects. A link to the codes on the Springer website will be provided to the readers.
