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Collana	Nonlinear dynamics perspective of Wolfram's new kind of science ; ; v. 6 World Scientific series on nonlinear science. Series A ; ; v. 85
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Dedication; Preface; CONTENTS; Volume VI; Chapter 1. Bernoulli - Shift Rules; 1. Introduction; 1.1. Brief notes on Bernoulli -shift rules; 2. Basin Tree Diagrams, Omega-Limit Orbits and Space-Time Patterns; 2.1. Basin tree diagrams and portraits of the -limit orbits; 2.2. Space-time patterns of Bernoulli rules using the super string as initial string; 3. Robust and Nonrobust -Limit Orbits of Rules from Group 4; 3.1. Robust -limit orbits of rules from Group 4; 3.2. Nonrobust -limit orbits of rules from Group 4; 4. Concluding Remarks; Chapter 2. More Bernoulli -Shift Rules 1. Introduction2. Bernoulli -Shift Rules; 2.1. General aspects of the Bernoulli -shift rules; 2.2. Basin-tree diagrams and portraits of their -limit orbits; 2.3. Space-time patterns of Bernoulli rules using the superstring as initial state; 3. Robust and Nonrobust -Limit Orbits of Rules from Group 4; 3.1. Robust -limit orbits of rules from Group 4; 3.2. Non-robust -limit orbits of rules from Group 4; 3.3. Rules with multiple robust -limit orbits; 4. Summary of Elementary 1D Cellular Automata; 4.1. Boolean cubes, complexity index, and threshold of

complexity

4.2. Globally and quasi-globally equivalent rules 4.3. Rotations and symmetries; 4.4. Classification of the local rules; 4.5. Fractality and quasi-ergodicity; 4.6. Isles of Eden and Omega-limit orbits; 5.

Concluding Remarks; Chapter 3. Remembrance of Things Past; Vignettes from Volume I; Vignettes from Volume II; Vignettes from Volume III; Vignettes from Volume IV; Vignettes from Volume V; Vignettes from Volume VI; Vignettes of Metaphors from Biology, Cosmology, Physics, etc.; Vignettes of 256 Boolean Cubes; References; Appendices

Appendix I: Correspondence between Chapters from Edited Book and Papers from IJBC Journal Appendix II: Useful and Generic Tables and Figures; Appendix III: Pages where 16 Exquisite Elementary CA Rules are Cited, Discussed, or Characterized; Appendix IV: Contents of Volumes I-VI; Index

Sommario/riassunto

This invaluable volume ends the quest to uncover the secret recipes for predicting the long-term evolution of a ring of identical elementary cells where the binary state of each cell during each generation of an attractor (i.e. after the transients had disappeared) is determined uniquely by the state of its left and right neighbors in the previous generation, as decreed by one of 256 truth tables. As befitting the contents aimed at school children, it was found pedagogically appealing to code each truth table by coloring each of the 8 vertices of a cubical graph in red (for binary state 1), or
