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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Chapter 1. Introduction: Time Between Metaphysics and Natural Sciences: From Physics to Biology (Christophe Bouton) -- Part I. The Experience of Time and the Scientific Framing of Time -- Chapter 2. Passage, Flow, and the Logic of Temporal Perspectives (Jenann Ismael) -- Chapter 3. Time of Logics and Time of Physics (Carlo Proietti) -- Chapter 4. Time Variable and Time Scales in Natural Systems and their Modeling (Annick Lesne) -- Chapter 5. On Time and the Varieties of Science (Kristie Miller) -- Part II. Time Paradoxes in Physics -- Chapter 6. Is the Future already Present? The Special Theory of Relativity and the Block Universe View (Christophe Bouton) -- Chapter 7. Dispelling the Quantum Spooks – a Clue that Einstein Missed? (Huw Price) -- Chapter 8. On time, causation and explanation in the causally symmetric Bohmian model of quantum mechanics (Joseph Berkovitz) -- Chapter 9. The Representation of Time in Discrete Mechanics (Anouk Barberousse) -- Part III. Dealing with deep time (Paleontology) -- Chapter 10. Paleontology: Outrunning Time (John Huss) -- Chapter 11. The Biologist's time and Deep Time: essay on the psychology of the

Paleobiologist (Armand J. de Ricqlès) -- Chapter 12. The Making of Paleontological Time (Pascal Tassy) -- Part IV. Time of the Evolution (Evolutionary and developmental Biology) -- Chapter 13. Repetition and Reversibility in Evolution: Theoretical Population Genetics (Jean Gayon) -- Chapter 14. Macroevolution and Microevolution: Issues of Time Scale in Evolutionary Biology (Philippe Huneman) -- Chapter 15. The timing of development (Antonine Nicoglou).

Sommario/riassunto

This volume addresses the question of time from the perspective of the time of nature. Its aim is to provide some insights about the nature of time on the basis of the different uses of the concept of time in natural sciences. Presenting a dialogue between philosophy and science, it features a collection of papers that investigate the representation, modeling and understanding of time as they appear in physics, biology, geology and paleontology. It asks questions such as: whether or not the notions of time in the various sciences are reducible to the same physical time, what status should be given to timescale differences, or what are the specific epistemic issues raised by past facts in natural sciences. The book first explores the experience of time and its relation to time in nature in a set of chapters that bring together what human experience and physics enable metaphysicians, logicians and scientists to say about time. Next, it studies time in physics, including some puzzling paradoxes about time raised by the theory of relativity and quantum mechanics. The volume then goes on to examine the distinctive problems and conceptions of time in the life sciences. It explores the concept of deep time in paleontology and geology, time in the epistemology of evolutionary biology, and time in developmental biology. Each scientific discipline features a specific approach to time and uses distinctive methodologies for implementing time in its models. This volume seeks to define a common language to conceive of the distinct ways different scientific disciplines view time. In the process, it offers a new approach to the issue of time that will appeal to a wide range of readers: philosophers and historians of science, metaphysicians and natural scientists - be they scholars, advanced students or readers from an educated general audience.
