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Autore	Banasiak J.
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Sommario/riassunto	The aim of this volume that presents Lectures given at a joint CIME and Banach Center Summer School, is to offer a broad presentation of a class of updated methods providing a mathematical framework for the development of a hierarchy of models of complex systems in the natural sciences, with a special attention to Biology and Medicine. Mastering complexity implies sharing different tools requiring much higher level of communication between different mathematical and scientific schools, for solving classes of problems of the same nature. Today more than ever, one of the most important challenges derives from the need to bridge parts of a system evolving at different time and space scales, especially with respect to computational affordability. As a result the content has a rather general character; the main role is played by stochastic processes, positive semigroups, asymptotic analysis, kinetic theory, continuum theory and game theory.