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Titolo	Nonlinear Dynamics, Chaos, and Complexity : In Memory of Professor Valentin Afraimovich / / edited by Dimitri Volchenkov
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Nota di contenuto	Professor Valentin Afraimovich -- The need for more integration between machine learning and neuroscience. Quasiperiodic Route to Transient Chaos in Vibroimpact System -- Modeling Ensembles of Nonlinear Dynamic Systems in Ultrawideb and Active Wireless Direct Chaotic Networks -- Verification of Biomedical Processes with Anomalous Diffusion, Transport and Interaction of Species -- Chaos-based communication using isochronal synchronization: considerations about the synchronization manifold.
Sommario/riassunto	This book demonstrates how mathematical methods and techniques can be used in synergy and create a new way of looking at complex systems. It becomes clear nowadays that the standard (graph-based) network approach, in which observable events and transportation hubs are represented by nodes and relations between them are represented by edges, fails to describe the important properties of complex

systems, capture the dependence between their scales, and anticipate their future developments. Therefore, authors in this book discuss the new generalized theories capable to describe a complex nexus of dependences in multi-level complex systems and to effectively engineer their important functions. The collection of works devoted to the memory of Professor Valentin Afraimovich introduces new concepts, methods, and applications in nonlinear dynamical systems covering physical problems and mathematical modelling relevant to molecular biology, genetics, neurosciences, artificial intelligence as well as classic problems in physics, machine learning, brain and urban dynamics. The book can be read by mathematicians, physicists, complex systems scientists, IT specialists, civil engineers, data scientists, urban planners, and even musicians (with some mathematical background). .