PREFACE

With a great pleasure we announce the launch of a new journal, named Journal of Nonlinear Systems and Applications (hereafter JNSA) and present to the scientific community its inaugural issue. JNSA is a peer-reviewed international journal that aims to publish state-of-the-art and high-quality original contributions from all aspects of nonlinear systems and applications in various fields of science and engineering.

Why do we need a new journal? Classical analysis and design methods were based on the premise that the nonlinearity and complexity in a system should be viewed as lying somewhere between novelties and undesirable features to be avoided if at all possible. This viewpoint has undergone a dramatic change. Recent developments -from control to communications, from circuitry to neurobiology, from economics to sociology -all have generated a great deal of excitement and interest in the emerging thinking of exploiting (rather than avoiding) dynamical features in various complex systems. While twenty years ago complex dynamics in such a wide variety of systems was somewhat a novelty to many of us, it has literally become an indispensable part of our toolkits today. Beside, applications of complex dynamics have appeared in many areas of engineering, physics and natural and social sciences. All these have led to a remarkable change in the way mathematicians, computer scientists and engineers interact with dynamics in nonlinear systems. It is apparent that there is a definite need to have a forum that would greatly facilitate the dissemination and cross-fertilization of ideas in these interdisciplinary areas of research. It is within this context that we have created this timely new journal-JNSA.

JNSA will publish papers from the cutting-edge research on complexity and related areas such as chaos, bifurcation and stability in mathematical and computational modeling of ecological, biological, social, economic and technological systems.

Topics include but are not limited to equation-based, deterministic, stochastic, ODE, PDE or mappings modeling nonlinear systems, study of complexity and complex systems, dynamical systems, nonlinear systems and control, stability and stabilization, synchronization, bifurcation and chaos, mathematical physics, hybrid systems and switching control, system control and optimization, distributed parameter systems, multi-agent systems, multi-scale systems, complex networks, neural networks, communication networks, intelligent adaptive systems, ecological and biological networks, complex population dynamics, natural and artificial ecosystems modeling, self-organization and global emergent properties. Papers submitted to this journal may focus on theoretical analysis, modeling of real world problems, algorithms, numerical simulations, or other applications.

In view of the multidisciplinary nature of the journal, abstract and introduction of a paper should be readable by a broad range of scientists and not only by specialists in the subject area.

JNSA aims to become a medium for rapid publication of outstanding achievements and important new discoveries in its field. With its high profile Editorial Board, this journal will attract leading researchers and experts around the globe. We hope that you will contribute to JNSA by submitting papers and recommending it to your library. We are all excited about this new journal and hope that you will share our enthusiasm and join us to make JNSA a first-class journal of the twenty first century.

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