



Nonlinear Oscillations and Boundary Value Problems

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Message from the Guest Editors

Dear colleagues,

The investigation of oscillatory phenomena is an important part of the theory of differential equations. It is well-known that oscillations occur in a natural way virtually in every area of applied science. One can mention, for instance, the beating of the human heart in medicine, business cycles in economics, predator-prey cycles in population dynamics, vibrating strings in musical instruments, periodic firing of nerve cells in the brain. Theoretical aspects of the classical theory of oscillations include the investigation of harmonic, periodic, and almost periodic solutions of various types of ordinary differential equations and systems. Among important related tasks one should outline obtaining sufficient conditions for the existence of such solutions, description of their asymptotic behaviour, study of oscillatory properties and mutual disposition of zeros, detection of solutions possessing particular symmetry properties, development of efficient methods for the construction of solutions. The topics mentioned have also a strong relation to the theory of non-linear boundary value problems.





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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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