



EDITED VOLUMES

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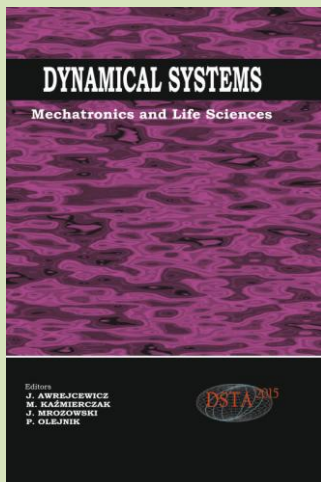
Dynamical Systems - Mechatronics and Life Sciences

(with M. Kaźmierczak, J. Mrozowski, P. Olejnik)

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SUMMARY



[Preface & Contents](#)

This is the thirteen time when the conference “Dynamical Systems: Theory and Applications” gathers a numerous group of outstanding scientists and engineers, who deal with widely understood problems of dynamics met in daily life.

Organization of the conference would not have been possible without a great effort of the staff of the Department of Automation, Biomechanics and Mechatronics, as well as Committee of Mechanics of the Polish Academy of Sciences. The financial support has been given by the Polish Academy of Sciences.

It is a great pleasure that our invitation has been accepted by recording in the history of our conference number of people, including good colleagues and friends as well as a large group of researchers and scientists, who decided to participate in the conference for the first time. With proud and satisfaction we welcomed over **180** persons from **29** countries all over the world. They decided to share the results of their research and many years experiences in a discipline of dynamical systems by submitting many very interesting papers.

This year, the DSTA Conference Proceedings were split into three volumes entitled “Dynamical Systems” with respective subtitles: *Mathematical and numerical approaches*; *Mechatronics and life sciences* and vol. 3 *Control and stability*. Additionally there will be also published two volumes of Springer Proceedings in Mathematics and Statistics entitled “*Dynamical Systems. Modelling*” and “*Dynamical Systems. Theoretical and Experimental Analysis*”.

These books include the invited papers and regular papers dealing with the following topics:

- control in dynamical systems,
- stability of dynamical systems,
- asymptotic methods in nonlinear dynamics,
- mathematical approaches to dynamical systems,
- dynamics in life sciences and bioengineering,
- engineering systems and differential equations,
- original numerical methods of vibration analysis,
- bifurcations and chaos in dynamical systems,
- vibrations of lumped and continuous systems,
- non-smooth systems,
- other problems.

Proceedings of the 13th Conference „Dynamical Systems - Theory and Applications” summarize **164** and the Springer Proceedings summarize **60** best papers of university teachers and students, researchers and engineers from whole the world. The papers were chosen by the International Scientific Committee from **315** papers submitted to

the conference. The reader thus obtains an overview of the recent developments of dynamical systems and can study the most progressive tendencies in this field of science.

Our previous experience shows that an extensive thematic scope comprising dynamical systems stimulates a wide exchange of opinions among researchers dealing with different branches of dynamics. We think that vivid discussions will influence positively the creativity and will result in effective solutions of many problems of dynamical systems in mechanics and physics, both in terms of theory and applications. We do hope that DSTA 2015 will contribute to the same extent as all the previous conferences to establishing new and tightening the already existing relations and scientific and technological co-operation between both Polish and foreign institutions.