GUEST EDITORIAL

Some active scientists working in the field of mathematical problems in engineering have been invited to submit their manuscripts presented during the 7th International Conference "Dynamical Systems—Theory and Applications" to this special issue of MPE, and six papers have been accepted. The papers presented in this special issue have been reviewed to follow Editor-in-Chief's, Professor Semyon M. Meerkov, requirements.

The mentioned conference has been organized by the staff of Department of Automatics and Biomechanics of Technical University of Łódź, in cooperation with the Mechanics Committee and Machine Dynamics Committee of the Polish Academy of Sciences. The members of the International Scientific Committee included Igor V. Andrianov (Dniepropetrovsk), Jan Awrejcewicz (Łódź), Iliya Blekhman (Sankt Petersburg), Roman Bogacz (Warszawa), Dick van Campen (Eindhoven), Zbigniew Engel (Kraków), Lothar Gaul (Stuttgart), Józef Giergiel (Kraków), Michał Kleiber (Warszawa), Vadim A. Krysko (Saratov), Włodzimierz Kurnik (Warszawa), Claude-Henri Lamarque (Lyon), Leonid I. Manevitch (Moscow), Jan Osiecki (Warszawa), Wiesław Ostachowicz (Gdańsk), Ladislav Pust (Prague), Giuseppe Rega (Rome), Tsuneo Someya (Tokyo), Zbigniew Starczewski (Warszawa), Eugeniusz Świtoński (Gliwice), Andrzej Tylikowski (Warszawa), Tadeusz Uhl (Kraków), Aleksander F. Vakakis (Illinois), and Józef Wojnarowski (Gliwice).

M. Popescu and A. Dumitrache study the minimization control problem of quadratic functionals for the class of affine systems with hypothesis of nilpotent associated Lie algebra. In particular, the minimum fuel problem for the multi-input control and for a scalar input bilinear system is addressed.

J. Awrejcewicz et al. propose a novel iteration procedure for dynamical problems of a contact zone magnitude of vibrations of two-layered uncoupled plates, where for each of layers the Kirchhoff hypothesis holds.

V. A. Ostapenko analyzes the mathematical model of interaction of vibrating surface with the load taking into account internal interaction of particles of a surrounding material. Exact solution to the stated problem is obtained in a class of the generalized functions.

In the paper by T. Kaczorek the realization problem for positive single-input single-output discrete time systems with one time delay is formulated and solved. In addition,

a procedure for computation of a minimal positive realization of a proper rational function is illustrated.

C.-H. Lamarque et al. consider a problem governed by differential inclusions with a delay via a Volterra kernel. Existence and uniqueness of the results owing to an Euler implicit numerical scheme are provided.

A. Tylikowski studies parametric vibrations of functionally graded plates subjected to in-plane time-dependent forces. The asymptotic stability and almost-sure asymptotic stability criteria involving a damping and loading parameters using the Liapunov's direct method are derived.

I do hope that many of the readers of MPE will be attracted by the topics included in this special issue.

I would like to thank Professor Semyon M. Meerkov for his efforts to publish some of the chosen papers in this special issue of MPE. I greatly appreciate the help of Mr. D. Sendkowski during gathering of all manuscripts.

On behalf of both Scientific and Organizing Committees
Chairman
Professor Jan Awrejcewicz

Special Issue on
Decision Support for Intermodal Transport

Call for Papers

Intermodal transport refers to the movement of goods in a single loading unit which uses successive various modes of transport (road, rail, water) without handling the goods during mode transfers. Intermodal transport has become an important policy issue, mainly because it is considered to be one of the means to lower the congestion caused by single-mode road transport and to be more environmentally friendly than the single-mode road transport. Both considerations have been followed by an increase in attention toward intermodal freight transportation research.

Various intermodal freight transport decision problems are in demand of mathematical models of supporting them. As the intermodal transport system is more complex than a single-mode system, this fact offers interesting and challenging opportunities to modelers in applied mathematics. This special issue aims to fill in some gaps in the research agenda of decision-making in intermodal transport.

The mathematical models may be of the optimization type or of the evaluation type to gain an insight in intermodal operations. The mathematical models aim to support decisions on the strategic, tactical, and operational levels. The decision-makers belong to the various players in the intermodal transport world, namely, drayage operators, terminal operators, network operators, or intermodal operators.

Topics of relevance to this type of decision-making both in time horizon as in terms of operators are:

- Intermodal terminal design
- Infrastructure network configuration
- Location of terminals
- Cooperation between drayage companies
- Allocation of shippers/receivers to a terminal
- Pricing strategies
- Capacity levels of equipment and labour
- Operational routines and lay-out structure
- Redistribution of load units, railcars, barges, and so forth
- Scheduling of trips or jobs
- Allocation of capacity to jobs
- Loading orders
- Selection of routing and service

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Manuscript Due	June 1, 2009
First Round of Reviews	September 1, 2009
Publication Date	December 1, 2009

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