

Special Session Proposal for the Polish Control Conference 2026

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Proposed Session Title: "Recent issues in Control Theory. The special session dedicated to Professor Wojciech Mitkowski on the occasion of His 80-th birthday"

Abstract:

This special session is devoted to presenting recent results, trends, and challenges in control theory and their practical applications. We invite contributions in the areas of modeling and control of infinite-dimensional, positive, fractional-order, and time-scale systems, as well as from applications of theoretical results in engineering, physics, biology, medicine, and the social sciences.

Description:

This session will focus on recently studied issues from area of the mathematical Control Theory and their application in engineering, physics, medicine, biology, social sciences and others. The session demonstrates the evolution of control theory development and shows how fundamental theoretical principles remain active in current control system implementations. The session will emphasize the interdisciplinary nature of control problems and their essential role in modern technologies including autonomous systems and smart grids and cyber-physical systems. The session encourages submissions about Professor Wojciech Mitkowski's scientific work and his lasting impact through research that builds upon or extends his previous findings. The session serves as a scientific exchange platform while honoring the Professor's exceptional work in advancing the field. In particular, the proposed session welcomes contributions on following topics (but of course not limited to):

- Modeling and control of infinite dimensional systems (distributed parameter systems and systems with delay),
- Positive systems,
- Dynamic systems on time scales,
- Synthesis of control systems,
- The application of fractional calculus in modeling and control,
- Optimal control,
- Stability, controllability and observability of various classes of dynamic systems,
- Model based control and predictive control,
- Digital control,
- Digital twins,
- Nonlinear control systems.