Special Issue

Applications Based on Symmetry in Control Systems and Robotics

Message from the Guest Editor

- Control theory is a fundamental engineering discipline that studies the design of strategies to modify the desired behavior of a system by manipulating its inputs, ensuring stability and performance in a wide range of applications, from robots to industrial processes. In recent years, symmetry has acquired a prominent role in control theory, providing new tools for the analysis and design of dynamic systems. In this context, symmetry refers to invariant properties of the system under certain transformations, making it possible to exploit mathematical foundations to improve the design of controllers. Its integration into control theory facilitates the understanding of system dynamics and contributes to the formulation of more efficient and stable control strategies.
- The analysis of symmetries in physical systems not only simplifies the design of control algorithms but can also improve the robustness and efficiency of controllers by reducing model complexity and providing a more predictable and controllable structure. In particular, symmetry plays a key role in the design of robust and adaptive controls, optimizing performance under dynamic and nonlinear conditions...

Guest Editor

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About the Journal

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.

Editor-in-Chief

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