



*symmetry*

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## Advances and Applications in Data-Driven Process Monitoring, Fault Diagnosis and Control

Guest Editors:

**Dr. Zhiwen Chen**

School of Automation, Central  
South University, Changsha,  
410083, China

**Prof. Dr. Hao Luo**

School of Astronautics, Harbin  
Institute of Technology, Harbin  
150001, China

**Prof. Dr. Chao Cheng**

School of Computer Science and  
Engineering, Changchun  
University of Technology,  
Changchun 130012, China

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### Message from the Guest Editors

In recent years, driven by the rapid advancements in electronics, information, and communication technology, disruptive changes are taking place in the industrial environment. The degree of automation in modern industrial systems is continuously growing, this fact challenges scientists and engineers to develop advanced process monitoring, fault diagnosis, and control methodologies, using offline, stored, or online process data to solve optimal process monitoring, fault diagnosis, and control issues. In addition, new methods have recently been developed, based on multivariate statistical analysis (including multivariate symmetry and asymmetry), data analytics (including information symmetry), machine learning (including deep learning), and data-driven control.

This planned Special Issue of Symmetry aims to provide a forum for researchers and industrial engineers to exchange the latest results on data-driven process monitoring, fault diagnosis, and control techniques, and to discuss the vital issues, challenges and possible future trends in modern large-scale industrial systems.



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# Special Issue



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### Prof. Dr. Sergei D. Odintsov

1. Institució Catalana de Recerca  
i Estudis Avançats (ICREA),  
Passeig Luis Companys, 23,  
08010 Barcelona, Spain  
2. Institute of Space Sciences  
(ICE-CSIC), C. Can Magrans s/n,  
08193 Barcelona, Spain

## 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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Symmetry Editorial Office  
MDPI, St. Alban-Anlage 66  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
www.mdpi.com

mdpi.com/journal/symmetry  
symmetry@mdpi.com  
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