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Symmetry in Chaotic Systems and Circuits 2022

Guest Editors:

Prof. Dr. Chunbiao Li

Dr. Qiang Lai

Prof. Dr. Xu Zhang

Prof. Dr. Fuhong Min

Dr. Tengfei Lei

Deadline for manuscript submissions:
closed (15 December 2022)

Message from the Guest Editors

Symmetry is a common phenomenon that exists widely in nonlinear circuits. Symmetric systems exhibit an elegant solution even when symmetry is broken. Symmetry can be obtained from various regimes of polarity balance, where reflection symmetry, rotational symmetry, and inversion symmetry are common in 3D systems and even offset boosting with a variable can return conditional symmetry. Symmetric chaotic circuits yield symmetric oscillation, which can be applied in many applications involving chaos-based engineering.

Many symmetric systems are robust, with global basin of attraction. When symmetry is broken, a symmetric pair of coexisting attractors may burst out, providing more possibilities with desired signal of bipolar and unipolar polarities. Chaotic systems of conditional symmetry provide extra alternatives for signal generation. In this sense, the design of symmetric chaotic circuits, including memristive circuits and neuron morphological circuits, is expected for meeting the requirements of more chaos-based applications. In this Special Issue, all new findings and reports on symmetric or conditional symmetric systems and circuits are welcome.

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Editor-in-Chief

Prof. Dr. Sergei Odintsov
ICREA, 08010 Barcelona and Institute of Space Sciences (IEEC-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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Contact Us

Symmetry Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

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

mdpi.com/journal/symmetry
symmetry@mdpi.com
𝕏@Symmetry_MDPI