



New Advances in New-Generation Communication and Symmetry

Guest Editors:

Prof. Dr. Jia Hou

Department of Communication
Engineering, Soochow University,
Suzhou 215000, China

Dr. Jun Li

School of Electronics and
Communication Engineering,
Guangzhou University,
Guangzhou 510006, China

Dr. Xueqin Jiang

School of Information Science
and Technology, Donghua
University, Shanghai, China

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Message from the Guest Editors

Dear Colleagues,

The past decade has witnessed tremendous increases in data throughput and the number of connected nodes, those tremendous increases will undoubtedly result in increasingly stringent requirements of spectral efficiency and energy efficiency. To meet these two requirements, the “symmetry” could be widely applied in signal processing, transforming, transmit protocols in future communications, such as index modulation, Intelligent Reflecting Surfaces (IRS)-based/reflecting, Space Time Coding and Orthogonal transforming. Different from conventional schemes, “symmetry” in communications could lead to one or more dimension(s) that considerably enhance the spectral efficiency under proper system configurations.

The topics of interest include but are not limited:

Symmetry in Communications Theory and Future Networking Architecture;

Symmetry in Matrix Theory and Its Applications to Future Communications;

Symmetry in Modulation and Coding Theory for Future Communications;

Symmetry in Reflecting Model and IRS Technology;

Symmetry in Communication Systems, Transformation and Protocols;





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Editor-in-Chief

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, Grosspeteranlage 5
4052 Basel, Switzerland

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