

Special Issue

Symmetry and Asymmetry in Emerging Wireless Communication and Networking Technologies

Message from the Guest Editor

This Special Issue invites contributions examining symmetric and asymmetric principles across the physical and network layers of next-generation wireless systems—from channel modeling and multiple access to reconfigurable antenna and surface technologies and learning-based network optimization. It aims to bring together theoretical, algorithmic, and system-level perspectives on how symmetry and asymmetry shape performance, reliability, and efficiency in 5G/6G, satellite, and IoT-scale networks. Symmetry appears throughout wireless communication systems in multiple forms: symmetric versus asymmetric channel statistics, geometric symmetry in satellite constellations and antenna arrays, and symmetric versus asymmetric exploration in learning-based network control. Understanding and exploiting these properties is increasingly central to the design of emerging wireless technologies. We welcome original research articles, as well as review papers, which advance the analytical, algorithmic, or experimental understanding of symmetry and asymmetry in this space. Both purely theoretical contributions and system-/hardware-informed studies are encouraged.

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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