

Special Issue

Advances in Symmetric Tensor Decomposition Methods

Message from the Guest Editor

Multi-way arrays (tensors) that demonstrate symmetry in all or selected modes can be found in a wide range of engineering and industrial applications, especially in signal processing, mobile communication, data mining, biomedical engineering, psychometrics, and chemometrics. Various tensor decomposition models and optimization algorithms have been developed to process such tensors, pursuing a variety of goals such as dimensionality reduction, and feature extraction. The aim of this Special Issue of *Symmetry* is to present the latest advances and possible future directions in the subarea of tensor decompositions that are related to various symmetry aspects. Such a relationship could be interpreted in a wide sense, for example, as the symmetry imposed onto models, in particular symmetric, near-symmetric, skew-symmetric, and semi-symmetric tensor decompositions; symmetric structures and architectures of tensor networks; or numerical algorithms that are addressed for updating these factors in such models...

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.

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