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The Quaternion Matrix and Its Applications

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Deadline for manuscript submissions:
closed (31 December 2023)

Message from the Guest Editors

In recent years, quaternion matrix decomposition theory, quaternion matrix eigenvalue theory, special solutions (Hermitian, generalized Hermitian, positive definite, real part symmetric) to quaternion matrix equation or systems, to name but a few examples, have been active areas of research. In color image processing, we can encode the red, green, and blue channel pixel values on the three imaginary parts of a quaternion so that certain properties can be retained as much as possible. As a result, the quaternion matrix model can be widely used in image compression, denoising, and restoration, among numerous other applications. The real matrix representation of a quaternion matrix with generalized symmetric structure plays an important role in quaternion matrix computation.

The goal of this Special Issue is to attract original research papers on the models, theory, algorithms, and applications associated with quaternion matrices. These applications include computer vision, image and video processing, graph and network analysis, and other data-driven applications.

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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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