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Exploring Symmetry in Dual Quaternion Matrices and Matrix Equations

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Message from the Guest Editor

Dear Colleagues,

Symmetry plays a crucial role in various mathematical fields, including in the study of matrices and equations. Dual quaternions, an extension of the concept of quaternions, are a powerful mathematical tool used in computer graphics, robotics, and physics.

Symmetry plays a crucial role in the study of dual quaternion matrices and matrix equations. Dual quaternions, as mathematical objects, possess inherent symmetries that reflect their geometric interpretations and allow for efficient computations. These symmetries can be exploited to simplify matrix equations and to develop more efficient algorithms for solving them.

By studying the symmetries of dual quaternion matrices within matrix equations, researchers can uncover deeper connections between geometric transformations and algebraic structures. This interdisciplinary approach paves the way for innovative applications in fields such as computer animation, robotic control, and mathematical physics.

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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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