

SYMMETRY PROPERTIES OF QUATERNIONIC
AND BIQUATERNIONIC ANALOGS
OF JULIA SETS

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S u m m a r y

The symmetries intrinsic to quaternions and biquaternions give rise to a class of identical Julia sets, which does not exist in the complex number case. In the case of quadratic mapping $X_{k+1} = \varepsilon X_k^2 + C$ (X, C are biquaternions of special case), these symmetries mean that the shape of a fractal Julia set is completely defined by just two numbers, C_0 and $|\mathbf{C}|$. The involutions defined for the set of biquaternions allow us to investigate discrete symmetries of the geometric images of sets. The introducing of three special types of biquaternions provides a convenience in studying the symmetry properties of these algorithms under discrete transformations as well.