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THE QUATERNIONIC DETERMINANT*

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Abstract. The determinant for complex matrices cannot be extended to quaternionic matrices. Instead, the Study determinant and the closely related q-determinant are widely used. In this paper it is shown that the Study determinant can be characterized as the unique functional extending the *absolute value* of the complex determinant, and its spectral and linear algebraic aspects are discussed.

Key words. Quaternions, Matrices, Determinant.

AMS subject classifications. 15A09, 15A33

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