

POLYNOMIAL NUMERICAL HULLS OF ORDER 3*

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*Dedicated to Professor Chandler Davis for his outstanding contributions to
Mathematics*

Abstract. In this note, analytic description of $V^3(A)$ is given for normal matrices of the form $A = A_1 \oplus iA_2$ or $A = A_1 \oplus e^{i\frac{2\pi}{3}}A_2 \oplus e^{i\frac{4\pi}{3}}A_3$, where A_1, A_2, A_3 are Hermitian matrices. The new concept “ k^{th} roots of a convex set” is used to study the polynomial numerical hulls of order k for normal matrices.

Key words. Polynomial numerical hull, Numerical order, K^{th} roots of a convex set.

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