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THE DAUGAVET EQUATION FOR POLYNOMIALS ON C^* -ALGEBRAS

The Daugavet equation and the alternative Daugavet equation were originally defined for linear operators in the works of I. K. Daugavet and of M. Martín and T. Oikhberg. Recently Y. S. Choi et al generalized their definitions for bounded functions on Banach spaces and these have been studied in particular for polynomials and homogeneous polynomials. We investigate such equations for polynomials on C^* -algebras. We study separately the cases in which the C^* -algebras are commutative and non-commutative. In these cases, we obtain necessary and sufficient conditions on such C^* -algebras in order that certain polynomial classes satisfy the Daugavet equation and the alternative Daugavet equation.

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