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TRACE AND DETERMINANT IN JORDAN-BANACH ALGEBRAS

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Abstract

Using an appropriate definition of the multiplicity of a spectral value, we introduce a new definition of the trace and determinant of elements with finite spectrum in Jordan-Banach algebras. We first extend a result obtained by J. Zemánek in the associative case, on the connectedness of projections which are close to each other spectrally (Theorem 2.3). Secondly we show that the rank of the Riesz projection associated to a finite-rank element a and a finite subset of its spectrum is equal to the sum of the multiplicities of these spectral values (Theorem 2.6). Then we turn to the study of properties such as linearity and continuity of the trace and multiplicativity of the determinant.

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