

Entropy numbers and eigenvalues of operators

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Abstract. We will discuss some recent results concerning modern topics in the theory of operators on Banach spaces. We introduce and study entropy and spectral moduli of operators, and show relationships between these moduli and eigenvalues of operators. In particular, some of the obtained formulas may be regarded as a generalization of the spectral radius formula, very much in the spirit of König's

$$|\lambda_n(T)| = \lim_{m \rightarrow \infty} a_n(T^m)^{1/m}$$

and Makai-Zemánek's

$$\left(\prod_{i=1}^n |\lambda_i(T)| \right)^{1/n} = \lim_{m \rightarrow \infty} g_n(T^m)^{1/m}$$

classical results. Combining our results with interpolation techniques yields an interpolation variant of Carl-Triebel's eigenvalue inequality. The talk is based on a joint work with M. Mastyło.