

Impressions of norm interpolation – An illustration for commutator bounds

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In the hunt for the smallest possible constant $C_{p,q,r}$ in the Schatten norm inequality

$$\|XY - YX\|_p \leq C_{p,q,r} \|X\|_q \|Y\|_r$$

(for all complex matrices X and Y) we will experience the advantages and the limitations of norm interpolation. We encounter connections to tensor products and a special adaption of the Riesz-Thorin Theorem in order to deal with the problems.