

On the optimal constants in the two-sided Stechkin inequalities

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The ℓ_1 -norm of a monotonically decreasing sequence of nonnegative numbers can be sandwiched by a sum involving the best n -term approximation errors measured in the ℓ_q -norm, suitably scaled by positive constants. But what are the optimal constants? In this talk, you will get in touch with the contributions of Copson, Stechkin, Pietsch, Temlyakov, and Bennett, the geometry behind the problem, and variants of the inequality, where the ℓ_1 -norm is replaced by its weak counterpart or where sums are replaced by integrals.

Joint work with: Tino Ullrich.

References

- [1] T. Jahn, T. Ullrich. On the optimal constants in the two-sided Stechkin inequalities. *J. Approx. Theory*, 269:105607, 2021.