

Bounds for the constant of analyticity via complexification techniques

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We show that on the real 2-dimensional Banach space ℓ_1^2 there is a real analytic function $f : B_{\ell_1^2} \rightarrow \mathbb{R}$, whose power series expansion at the origin has radius of uniform convergence equal to one, yet for some point $a \in B_{\ell_1^2}$, the power series centered at a has radius of uniform convergence strictly less than $1 - \|a\|$. This example illustrates a fundamental phenomenon specific to real analytic functions: unlike in the complex case, the radius of analyticity may fail to coincide with the radius of uniform convergence.