



Oberseminar Funktionentheorie

Freitag, 4. Februar 2022, 10.15 Uhr

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Bohr phenomenon for Banach spaces

Abstract. Let $H^\infty(\Omega, X)$ be the space of bounded analytic functions $f(z) = \sum_{n=0}^{\infty} x_n z^n$ from a proper simply connected domain Ω containing the unit disk $\mathbb{D} := \{z \in \mathbb{C} : |z| < 1\}$ into a complex Banach space X with $\|f\|_{H^\infty(\Omega, X)} \leq 1$. Let $\phi = \{\phi_n(r)\}_{n=0}^{\infty}$ with $\phi_0(r) \leq 1$ such that $\sum_{n=0}^{\infty} \phi_n(r)$ converges locally uniformly with respect to $r \in [0, 1)$. For $1 \leq p, q < \infty$, we denote

$$R_{p,q,\phi}(f, \Omega, X) = \sup \left\{ r \geq 0 : \|x_0\|^p \phi_0(r) + \left(\sum_{n=1}^{\infty} \|x_n\| \phi_n(r) \right)^q \leq \phi_0(r) \right\}$$

and define the Bohr radius associated with ϕ by

$$R_{p,q,\phi}(\Omega, X) = \inf \{ R_{p,q,\phi}(f, \Omega, X) : \|f\|_{H^\infty(\Omega, X)} \leq 1 \}.$$

In this talk we discuss the Bohr radius $R_{p,q,\phi}(\Omega, X)$, when X is an arbitrary Banach space and $X = \mathcal{B}(\mathcal{H})$ is the algebra of all bounded linear operators on a complex Hilbert space $\mathcal{H}$. Furthermore, we discuss the Bohr inequality for the operator-valued Cesàro operator and Bernardi operator.

Alle Interessenten sind herzlich eingeladen !