Summer School 2026

Topics in Banach Space Theory

Bounds on injectivity of ℓ_∞/c_0

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Abstract

A Banach space X is injective if every bounded linear operator having X as the codomain can be extended to any superspace of the domain. Such general injectivity is a very strong property that not many spaces can satisfy, so certain restricted versions of this notion are considered, where the domain of the operator is required to belong to some class of Banach spaces, for instance spaces of density samller than κ. The aim of this talk is to briefly discuss what is known about the extent of injective properties of ℓ_∞/c_0. In particular, we will be looking at the possibility of extending operators $T : c_0(\kappa) \to \ell_\infty/c_0$ for different cardinals κ; what are the bounds on injectivity of ℓ_∞/c_0 that can be derived in this way and what are the limits of such an approach. A part of the talk is based on joint results with Piotr Koszmider.