Summer School 2026

Topics in Banach Space Theory

A Banach space with an unconditional basis which is not slicely countably determined

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Abstract

Slicely countably determined (SCD) Banach spaces were introduced by Avilés et al. (2010) to provide a class of separable Banach spaces containing spaces with the Radon–Nikodým property and spaces not containing a copy of ℓ_1. So far, the only examples of non-SCD spaces were spaces with the Daugavet property. In this talk, we exhibit an example, namely, the Banach space generated by the infinite binary tree (introduced initially by Rosenthal), which has a 1-unconditional basis while failing SCD, answering an open question. We will present some interesting geometric properties of the unit ball of this space and, if time permits, discuss some open questions related to the existence of countable π-bases for the relative weak topology.