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Title of the talk

Descriptive complexity of Banach spaces

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Abstract

We introduce a new natural coding of separable Banach spaces. The set of codes consists of (pseudo)norms on a certain vector space and is equipped with a canonical Polish topology. We use this coding to investigate the descriptive complexities of some classical Banach spaces. Among other results, we show that ℓ_2 is

(a) the unique (up to isometry) separable Banach space with a closed isometry class,

(b) the unique (up to isomorphism) separable Banach space with an F_σ isomorphism class.