

TSIRELSON-LIKE SPACES AND COMPLEXITY QUESTIONS IN BANACH SPACE THEORY

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During the last two decades, it turned out that descriptive set theory provides a fruitful approach to several questions in separable Banach space theory. In the talk, we will discuss the particular and generally still not well understood question of the complexity of a given class of separable Banach spaces in the Effros Borel structure.

Employing a construction of Tsirelson-like spaces due to S. A. Argyros and I. Deliyanni, we establish the following results. (1) The class of all spaces which can be embedded isomorphically into c_0 is complete analytic. (2) The class of all separable spaces with the Schur property is $\mathbf{\Pi}_2^1$ -complete. The same holds for the Dunford-Pettis property.

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