

ON COMPLEX STRUCTURES AND UNIQUENESS OF ALGEBRA NORMS IN BANACH SPACES

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In this talk, we study the quotient algebra $L(Z_2)/S(Z_2)$, where Z_2 is the Kalton-Peck space and S denotes the ideal of strictly singular operators. First, we use quantitative notions of singularity to extend results by Ferenczi and Galego (2007) concerning complex structures on a real Banach space and its hyperplanes. We also investigate the extension properties of operators from ℓ_2 to Z_2 . Finally, we demonstrate that for a certain algebra norm $\|\cdot\|_S$, the space $L(Z_2)/S(Z_2)$ is not complete, which relates to a question of Kalton and Swanson (1982).

Trabajo en conjunto con Valentin Ferenczi (Universidade de São Paulo).