

Weak Banach-Saks and Radon-Nikodym properties in function spaces

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A classical result of Hardy motivated the study of the Cesàro operator

$$\mathcal{C} : f \mapsto \mathcal{C}(f)(x) := \frac{1}{x} \int_0^x f(t) dt,$$

in the L^p spaces, leading to the spaces $Ces_p := \{f : \mathcal{C}(|f|) \in L^p\}$, which have been extensively studied. We focus our attention on the spaces obtained by considering operators T other than the Cesàro operator and function spaces X other than L^p , resulting in the spaces

$$[T, X] := \{f : T(|f|) \in X\}.$$

We consider the weak Banach-Saks and the Radon-Nikodym properties for the spaces $[T, X]$.

The results presented in this talk are joint work with Werner J. Ricker from the Katholische Universität Eichstätt-Ingolstadt (Germany).

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