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James–Schreier spaces

ABSTRACT. Continuing from Niels Laustsen’s talk, and assuming some of its Banach space definitions, further aspects of the new “James–Schreier” Banach sequence spaces will be investigated.

In particular, as a commutative Banach algebra with a bounded approximate identity, we look at its cohomology; and as a Banach space, we will establish why the James–Schreier space is isomorphic to neither the James nor the Schreier spaces on which it is modelled.

Every Banach space with an unconditional (Schauder) basis has Pełczyński’s property (u), and this property is inherited by all subspaces. That the James space does not have property (u) follows straightforwardly from the separability of its second dual (given by its famous quasi-reflexivity). We will define Pełczyński’s property (u) and outline a proof that it does not hold for the James–Schreier spaces, which have non-separable second dual.