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ABSOLUTELY SUMMING OPERATORS ON SEPARABLE LINDENSTRAUSS SPACES AS TREE SPACES AND THE BOUNDED APPROXIMATION PROPERTY

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Dedicated to the memory of Joram Lindenstrauss

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ABSTRACT. Let X be a Banach space and let Y be a separable Lindenstrauss space. We describe the Banach space $\mathcal{P}(Y, X)$ of absolutely summing operators as a general ℓ_1 -tree space. We also characterize the bounded approximation property and its weak version for X in terms of the space of integral operators $\mathcal{I}(X, Z^*)$ and the space of nuclear operators $\mathcal{N}(X, Z^*)$, respectively, where Z is a Lindenstrauss space, whose dual Z^* fails to have the Radon-Nikodým property.

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