

Connections between metric characterizations of superreflexivity and the Radon-Nikodým property for dual Banach spaces

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Abstract. Johnson and Schechtman (2009) characterized superreflexivity in terms of finite diamond graphs. The present author characterized the Radon-Nikodým property (RNP) for dual spaces in terms of the infinite diamond. This paper is devoted to further study of relations between metric characterizations of superreflexivity and the RNP for dual spaces. The main result is that finite subsets of any set M whose embeddability characterizes the RNP for dual spaces, characterize superreflexivity. It is also observed that the converse statement does not hold, and that $M = \ell_2$ is a counterexample.