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Multivalued version of Radon-Nikodym theorem

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ABSTRACT. We defined in [7] a set-valued integral for multifunctions with respect to a multimeasure, where both the multifunctions and the multimeasure take values in $\mathcal{P}_{kc}(X)$, the family of nonempty compact convex subsets of a locally convex algebra X . But the construction of the integral and all the results remain valid if the multifunctions and the multimeasure take values in $\mathcal{P}_k(X)$, the family of nonempty compact subsets of X .

In this paper we establish a Radon-Nikodym theorem (for the integral described in [7], but using the family $\mathcal{P}_k(X)$ instead of $\mathcal{P}_{kc}(X)$) which bases on a construction of Maynard type [14], using the notion of exhaustion.

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