

Convergences in a dual space with applications to Fatou lemma

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Abstract. We present new convergence results and new versions of Fatou lemma in Mathematical Economics based on various tightness conditions and the existence of scalarly integrable selections theorems for the (sequential)-weak-star upper limit of a sequence of measurable multifunctions taking values in the dual E' of a separable Banach space E . Existence of conditional expectation of weakly-star closed random sets in a non norm separable dual space is also provided.

Key words: Biting lemma, conditional expectation, Fatou lemma, Komlós convergence, sequential weak upper limit, Tightness