

**Jurečková, M.**

**On the conditional expectation on probability MV-algebras with product.** (English)

Zbl 1003.60010

Soft Comput. 5, No. 5, 381-385 (2001).

Let  $M$  be a  $\sigma$ -complete MV-algebra with product, let  $m$  be a faithful state on  $M$ , and let  $(M, m)$  be the resulting probability MV-algebra. An observable is a map of the Borel subsets of  $R$  into  $M$  partially preserving the structure of events. Let  $x$  and  $y$  be observables. The conditional expectation  $E(x|y)$  is constructed and the following variant of the martingale convergence theorem is proved: Let  $(g_n)$  be a sequence of Borel measurable functions, let  $y_n = y \circ g_n^{-1}$ ,  $n \in N$ . Then, under natural additional conditions,  $E(x|y_n)$  converges to  $E(x|y)$  almost everywhere with respect to the distribution  $m_y$ . The constructions generalize the corresponding results for MV-algebras of fuzzy sets [*B. Riečan*, Soft Comput. 4, No. 1, 49-57 (2000)].

Reviewer: [Roman Frič \(Košice\)](#)

**MSC:**

[60B99](#) Probability theory on algebraic and topological structures  
[28A25](#) Integration with respect to measures and other set functions  
[06D35](#) MV-algebras

Cited in **2** Documents

**Keywords:**

MV-algebra with product; conditional expectation; observable; martingale convergence theorem

**Full Text:** [DOI](#)