THE PSEUDO PROBABILITY

Ljubo M. Nedović, Tatjana Grbić

Faculty of Engineering
University of Novi Sad
Trg D. Obradovića 6, 21000 Novi Sad, Yugoslavia
nljubo@uns.ns.ac.yu, tatjana@uns.ns.ac.yu

Let $(I, \oplus, \odot)$ is a semiring with a neutral elemet 0 of the $\oplus$ and a neutral element 1 of the $\odot$. Let Σ be a σ-algebra of subsets of nonempty set Ω.

Pseudo probability is a function $P : \Sigma \to I$ with the next properties:

(1) $P(\emptyset) = 0$ and $P(\Omega) = 1$,

(2) $P\left(\bigcup\limits_{i=1}^{\infty} A_i\right) = \bigoplus\limits_{i=1}^{\infty} P(A_i)$ for pairwise disjoint sets $\{A_i\}_{i \in N}$ from Σ.

The triple (Ω, Σ, P) is called a pseudo probability space.

In this paper will be present some properties of the pseudo probability space and the pseudo variables.

Key words and phrases: semiring, pseudo operation, pseudo probability, pseudo variable.

References

[1] Chateauneuf A.: *Decomposable measures, distorted probabilities and concave capacities*, (reprint).

[2] Klement E. P., Mesiar R., Pap E.: *Triangular norms*, Kluwer Acad. Publ., Dordrecht, 2000.

[3] Marichal J. L.: *On an axiomatization of the quasi-arithmetic means values without the symmetry axiom*, (reprint).

[4] Pap E.: *Null-Additive Set Functions*, Kluwer, Dordrecht; Ister Science, Bratislava, 1995.

[5] Ralević N. M.: *The pseudo-probability*, Zb. rad. Prim '98.

[6] Ralević N. M., Grbić T., Nedović Lj.: *Law of large numbers in the pseudo-probability spaces*, Zb. rad. Prim '98.

[7] Ralević N. M., Nedović Lj.: *The probability defined on semirings*, Pannonian Applied Mathematical Meeting, Göd, Hungary, 1999.