

**Svarovskij, S. G.**

**Usage of linguistic variable concept for human operator modelling.** (English) Zbl 0613.90060  
*Fuzzy Sets Syst.* 22, 107-114 (1987).

In many papers a human decision process is reproduced as a process of using minimum and product operators for research of a decision set on intersection goals and restrictions. Now mathematical psychology does not have any method for obtaining fuzzy goals and restrictions on an interval scale, thus using these operators for human decision modelling is limited. In the present paper a linguistic variable is assumed as some reflection of the real world in a person's consciousness. After the numbers have disappeared a human operator has to perform the operations with images (or words) of natural language only.

The situation being thus, the concept of decision membership function may be introduced, which must be defined on a nominal scale of the combination of terms. The problem of an experiment planning for the definition of membership values having been considered, the analytical functions for their approximation are introduced. This results in decreasing the dimension of the human operator modelling task in man-machine design. The results of our experiments indicate the possibility of model usage for evaluation of the operator's training level.

**MSC:**

90B99 Operations research and management science  
03E72 Theory of fuzzy sets, etc.  
91E99 Mathematical psychology

Cited in 1 Document

**Keywords:**

linguistic variable; human decision process; man-machine design

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

**References:**

- [1] Anokhin, P.C., Selected works, (1979), Nauka Moscow, (in Russian)
- [2] Ezhkova, I.V.; Pospelov, D.A., Decision making with fuzzy foundation, *Izv. akad. nauk SSSR tekhn. cybernet.*, 6, 3-11, (1977), (in Russian)
- [3] Himmelblay, D.M., Applied nonlinear programming, (1972), McGraw-Hill New York
- [4] Kaufmann, A., ()
- [5] MacVicar-Whelan, P.J., Fuzzy sets for man-machine interaction, *Internat. J. man-machine stud.*, 8, 687-697, (1976) · [Zbl 0342.68057](#)
- [6] Svarovski, S.G., Human operator decision modelling for the usage on man-machine designing, (), 36-46, (in Russian)
- [7] Svarovski, S.G., Operator activity modelling with fuzzy set theory, (), 27-36, (in Russian)
- [8] Thole, U.; Zimmermann, H.-J.; Zysno, P., On the suitability of minimum and product operators for the intersection of fuzzy sets, *Fuzzy sets and systems*, 2, 167-180, (1979) · [Zbl 0408.94030](#)
- [9] Zadeh, L.A., The concept of linguistic variable and its application to approximate reasoning, (), 1-10 · [Zbl 0397.68071](#)

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.