University of Latvia

Faculty of Physics and Mathematics

Department of Mathematics

Summary of the Dissertation

Fuzzy matrices and generalized aggregation operators: theoretical foundations and possible applications

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The defense of dissertation will take place at the open session of the Dissertation Commission in Mathematics of the University of Latvia to be held on October 27th, 2010, at 14:30 in Room 241 of the Department of Mathematics, Faculty of Physics and Mathematics, University of Latvia in Rīga, Zeļļu street 8.

The dissertation and its summary are available at the Library of the University of Latvia (Rīga, Kalpaka boulevard 4).

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Annotation

According to the author's observations two mainstreams in the development of the theory of fuzzy sets can be isolated: the fuzzification of already known notions and the development of notions which either were originated in the frame of the theory of fuzzy sets or are tightly related to the theory. Many approaches and notions in topology, algebra, financial calculus and other fields were generalized by using fuzzy sets. Under the second mainstream we can mention such notions as the extension principle, a t-norm, a possibility distribution and others.

The goal of the thesis is to contribute to the both mainstreams. The following task is completed in the thesis: the theory of fuzzy matrices and the theory of generalized aggregation operators are developed and possible practical applications of the obtained results are outlined.

Years over years fuzzy sets community comes with a plenty of new and interesting results in the theory of fuzzy sets. Introduction of new and bright results is the complimentary but not easy task. This contribution has already interested at least one scientist from the community, i.e. the scientific supervisor of the thesis, thus the author considers that its development was not useless.