Považan, Jaroslav; Riečan, Beloslav

Fuzzy sets and small systems. (English) Zbl 1340.28021

Brandts, J. (ed.) et al., Proceedings of the international conference 'Applications of mathematics', Prague, Czech Republic, May 15–17, 2013. In honor of the 70th birthday of Karel Segeth. Prague: Academy of Sciences of the Czech Republic, Institute of Mathematics (ISBN 978-80-85823-61-5). 185-187 (2013).

Summary: Independently with *L. A. Zadeh* [Inf. Control 8, 338–353 (1965; Zbl 0139.24606)] a corresponding fuzzy approach has been developed in [*T. Neubrunn*, Mat. Čas., Slovensk. Akad. Vied 19, 202–215 (1969; Zbl 0186.09801); *B. Riečan*, Mat.-Fyz. Čas., Slovensk. Akad. Vied 16, 268–273 (1966; Zbl 0174.34402); Mat. Čas., Slovensk. Akad. Vied 19, 138–144 (1969; Zbl 0193.00903)] with applications in measure theory. As one of the results, the Egorov theorem has been proved in an abstract form. In [*J. Li*, "Convergence theorems in monotone measure theory", in: R. Mesiar (ed.) et al., Non-classical measures and integrals, 34th Linz seminar on fuzzy sets theory. 88–91 (2013)] a necessary and sufficient condition for holding the Egoroff theorem was presented in the case of a space with a monotone measure. By the help of [*J. Li* and *M. Yasuda*, Fuzzy Sets Syst. 153, No. 1, 71–78 (2005; Zbl 1077.28015)] and [*B. Riečan* and *T. Neubrunn*, Integral, measure, and ordering. Dordrecht: Kluwer Academic Publishers (1997; Zbl 0916.28001)] we prove a variant of the Egorov theorem stated in [Zbl 0174.34402].

For the entire collection see [Zbl 1277.00032].

MSC:

28E10 Fuzzy measure theory
28A20 Measurable and nonmeasurable functions, sequences of measurable functions, modes of convergence

Keywords:

Egorov theorem; fuzzy set; measure theory; monotone function

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