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Reasonable properties for the ordering of fuzzy quantities. II. (English) Zbl 0971.03055
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In Part I [reviewed above], possibilities (based on the defuzzification indices or the comparison with reference quantities) of ordering of fuzzy quantities were analysed. The aim of this paper is the continuation of this interesting study, more precisely, discussion of the ordering approach based on fuzzy relations from the point of view of the axioms given in the above mentioned work. Special attention is given to the acyclicity property.

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MSC:

[03E72](#) Theory of fuzzy sets, etc.
[06A99](#) Ordered sets

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References:

- [1] Baas, S.M.; Kwakernaak, H., Rating and ranking of multiple-aspect alternatives using fuzzy sets, *Automatica*, 13, 47-58, (1977) · [Zbl 0363.90010](#)
- [2] Baldwin, J.F.; Guild, N.C.F., Comparison of fuzzy sets on the same decision space, *Fuzzy sets and systems*, 2, 213-231, (1979) · [Zbl 0422.90004](#)
- [3] Delgado, M.; Verdegay, J.L.; Vila, M.A., A procedure for ranking fuzzy numbers, *Fuzzy sets and systems*, 26, 49-62, (1988) · [Zbl 0647.94026](#)
- [4] Dubois, D.; Prade, H., Ranking fuzzy numbers in the setting of possibility theory, *Inform. sci.*, 30, 183-224, (1983) · [Zbl 0569.94031](#)
- [5] G.M. Fikhtengol'ts, *The Fundamentals of Mathematical Analysis*, vol. 2, Pergamon Press, London, 1965.
- [6] Kołodziejczyk, W., Orlovsky's concept of decision-making with fuzzy preference relation – further results, *Fuzzy sets and systems*, 19, 197-212, (1990)
- [7] Montero, F.J.; Tejada, J., A necessary and sufficient condition for the existence of Orlovsky's choice set, *Fuzzy sets and systems*, 26, 121-125, (1988) · [Zbl 0641.90007](#)
- [8] Nakamura, K., Preference relations on a set of fuzzy utilities as a basis for decision making, *Fuzzy sets and systems*, 20, 147-162, (1986) · [Zbl 0618.90001](#)
- [9] Ovchinnikov, S.V., Transitive fuzzy ordering of fuzzy numbers, *Fuzzy sets and systems*, 35, 283-295, (1989) · [Zbl 0675.06002](#)
- [10] Saade, J.J.; Schwarzlander, H., Ordering fuzzy sets over the real line: an approach based on decision making under uncertainty, *Fuzzy sets and systems*, 50, 237-246, (1992)
- [11] X. Wang, D. Ruan, On the transitivity of fuzzy preference relations in ranking fuzzy numbers, in: D. Ruan (Ed.), *Fuzzy Set Theory and Advanced Mathematical Applications*, Kluwer Academic Publishers, Dordrecht, 1995, pp. 155-173. · [Zbl 0874.90008](#)
- [12] Wang, X.; Ruan, D.; Kerre, E.E., The use of weak transitivity in ranking fuzzy numbers, (), 322-332
- [13] Wang, X., An investigation into relations between some transitivity-related concepts, *Fuzzy sets and systems*, 89, 257-262, (1997) · [Zbl 0917.90025](#)
- [14] Wang, X.; Kerre, E.E., Reasonable properties for the ordering of fuzzy quantities (I), *Fuzzy sets and systems*, 118, 375-385, (2001) · [Zbl 0971.03054](#)
- [15] X. Wang, A comparative study of the ranking methods for fuzzy quantities, Ph.D. Thesis, University of Ghent, 1997.
- [16] Watson, S.R.; Weiss, J.J.; Donnel, M.L., Fuzzy decision analysis, *IEEE trans. systems man cybernet.*, 9, 1-9, (1979)
- [17] Yuan, Y., Criteria for evaluating fuzzy ranking methods, *Fuzzy sets and systems*, 43, 139-157, (1991) · [Zbl 0747.90003](#)

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