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Fuzzy logic and arithmetical hierarchy. IV. (English) Zbl 1084.03020

Hendricks, Vincent (ed.) et al., First-order logic revisited. Proceedings of the conference FOL75 – 75 years of first-order logic, Humboldt-University, Berlin, Germany, September 18–21, 2003. Berlin: Logos Verlag (ISBN 3-8325-0475-3/pbk). *Logische Philosophie* 12, 107-115 (2004).

The author, in previous papers of this sequence [see [Zbl 0857.03011](#), [Zbl 0869.03015](#) and [Zbl 0988.03042](#)] as well as *F. Montagna* [*Stud. Log.* 68, 143–152 (2001; [Zbl 0985.03014](#))] have given a series of complexity results for first-order t-norm based fuzzy logics, for the cases that these basic t-norms are the Łukasiewicz, the Gödel, or the product t-norm.

Here the author extends these results to t-norms that have as first summands in their ordinal sum representation isomorphic copies of the Gödel or the Łukasiewicz t-norm, and in the latter case also to the first-order logics which additionally have the Baaz Δ -operator.

For the entire collection see [[Zbl 1076.03004](#)].

Reviewer: [Siegfried J. Gottwald \(Leipzig\)](#)

MSC:

[03B52](#) Fuzzy logic; logic of vagueness

[03B50](#) Many-valued logic

[03D15](#) Complexity of computation (including implicit computational complexity)

Cited in **3** Documents

Keywords:

t-norm based many-valued logics; satisfiability; validity; complexity