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Triangular norm-based mathematical fuzzy logics. (English) Zbl 1078.03020

Klement, Erich Peter (ed.) et al., Logical, algebraic, analytic and probabilistic aspects of triangular norms. Selected papers from the 24th Linz seminar on fuzzy set theory, Linz, Austria, February 4–8, 2003. Amsterdam: Elsevier (ISBN 0-444-51814-2/hbk). 275-299 (2005).

Authors' abstract: In this chapter, we consider particular classes of infinite-valued propositional logics which are strongly related to t -norms as conjunction connectives and to the real unit interval as set of their truth degrees, and which have their implication connectives determined via an adjointness condition. Such systems have in the last ten years been of considerable interest, and the topic of important results. They generalize well-known systems of infinite-valued logic, and form a link to as different areas as, e.g., linear logic and fuzzy set theory. We survey the most important ones of these systems, always explaining suitable algebraic semantics and adequate formal calculi, but also discussing complexity issues. Finally we mention a type of extension which allows for graded notions of provability and entailment.

For the entire collection see [\[Zbl 1063.03003\]](#).

Reviewer: [Claudi Alsina \(Barcelona\)](#)

MSC:

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

Cited in **18** Documents

Keywords:

[t-norms](#); [logical connective](#); [fuzzy logic](#); [algebraic semantics](#); [survey](#)