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On the difference between traditional and deductive fuzzy logic. (English) Zbl 1175.03012
Fuzzy Sets Syst. 159, No. 10, 1153-1164 (2008).

Author's abstract: "In three case studies on notions of fuzzy logic and fuzzy set theory (Dubois-Prade's gradual elements, the entropy of a fuzzy set, and aggregation operators), the paper exemplifies methodological differences between traditional and deductive fuzzy logic. While traditional fuzzy logic admits various interpretations of membership degrees, deductive fuzzy logic always interprets them as degrees of truth preserved under inference. The latter fact imposes several constraints on systems of deductive fuzzy logic, which need not be followed by mainstream fuzzy logic. That makes deductive fuzzy logic a specific area of research that can be characterized both methodologically (by constraints on meaningful definitions) and formally (as a specific class of logical systems). An analysis of the relationship between deductive and traditional fuzzy logic is offered."

Reviewer: [Radko Mesiar \(Bratislava\)](#)

MSC:

[03B52](#) Fuzzy logic; logic of vagueness
[03E72](#) Theory of fuzzy sets, etc.
[68T37](#) Reasoning under uncertainty in the context of artificial intelligence

Cited in **6** Documents

Keywords:

[deductive fuzzy logic](#); [fuzzy elements](#); [gradual sets](#); [entropy of fuzzy sets](#); [aggregation](#); [membership degrees](#); [methodology of fuzzy mathematics](#)

Full Text: [DOI](#)

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