

Special Session NF_SS1: Inter-Relation between Interval and Fuzzy Techniques

The relation between fuzzy and interval techniques is well known; e.g., due to the fact that a fuzzy number can be represented as a nested family of intervals (alpha-cuts), level-by-level interval techniques are often used to process fuzzy data.

At present, researchers in fuzzy data processing mainly used interval techniques originally designed for non-fuzzy applications, techniques which are often taken from textbooks and are, therefore, already outperformed by more recent and more efficient methods.

One of the main objectives of the proposed special session is to make the fuzzy community at-large better acquainted with the latest, most efficient interval techniques, especially with techniques specifically developed for solving fuzzy-related problems.

Another objective is to combine fuzzy and interval techniques, so that we will be able to use the combined techniques in (frequent) practical situations where both types of uncertainty are present: for example, when some quantities are known with interval uncertainty (e.g., coming from measurements), while other quantities are known with fuzzy uncertainty (coming from expert estimates).

KEYWORDS: interval computations, interval uncertainty, interval-valued fuzzy sets

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