Representing and Managing Uncertainty: different scenarios, different tools

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Description:

The notion of uncertainty has been extensively analysed in the last decades by philosophers, logicians and computer scientists. Here we are interested in the uncertainty originated by different characteristics and flaws in information: incompleteness, imprecision, graduality, granularity, contradiction between agents, etc. For each of these aspects one (or more) specific tool has been introduced in literature: fuzzy sets, rough sets, formal concept analysis, possibility theory, Dempster-Shafer theory, interval analysis, compound objects comparators, etc. Further, when more than one form of uncertainty is present at the same time, it seems natural to fuse such tools, as in the fuzzy rough set case. The special session is devoted to collect all contributions that deal with scenarios leading to a form of uncertainty and tools to represent and manage it. In particular, all critical discussions, comparisons among two or more forms of uncertainty and/or comparisons and fusion of two or more tools are welcome.

The not exhaustive list of topics includes:

- fuzzy rough sets

- interval-valued fuzzy sets

- formal concept analysis

- mathematical morphology

- fuzzy relation equations
- possibility theory
- Dempster-Shafer theory
- supervaluations
- near sets
- interval analysis
- grey sets
- non-classical logics (many valued, paraconsistent, epistemic, etc.)
- similarity-based reasoning
- networks of comparators