

Lecture 8	Towards More Realistic Group Decisions and Consensus Reaching under Imprecise Information
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Abstract

We consider decision making where individuals are to be taken into account, not necessarily with the same weight, and a best decision, one that best reflects the opinion of the group as a whole, is sought. In general, to find a good solution which is meaningful and representative for the group, first a possibly high agreement among members of the group, a “consensus”, should be reached.

We assume a set of options and a group of individuals (decision-makers, experts etc.) who provide nonfuzzy or fuzzy preferences among options and importance weights. A fuzzy majority represented by a fuzzy linguistic quantifier as introduced by Kacprzyk is assumed. We derive some solution concepts, notably Kacprzyk’s fuzzy cores and consensus winners, and show that they may be protoforms of a wide class of individual and collective choice functions.

Next, we assess (an extent of) consensus with a “soft” concept of consensus in which, for instance, an agreement between most of the individuals with respect to almost all options. We do not model the consensus reaching (cf. Ragade) but monitor the consensus reaching process, and support a moderator to help reach consensus.

We indicate how the approaches presented can help avoid some known voting paradoxes, and show the importance of the models developed to, e.g., multiagent systems in a collective (group) setting, i.e. opinions (testimonies) of the.