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p-symmetric bi-capacities

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Abstract: Bi-capacities have been recently introduced as a natural generalization of capacities (or fuzzy measures) when the underlying scale is bipolar. They allow to build more flexible models in decision making, although their complexity is of order 3^n, instead of 2^n for fuzzy measures. In order to reduce the complexity, the paper proposes the notion of p-symmetric bi-capacities, in the same spirit as for p-symmetric fuzzy measures. The main idea is to partition the set of criteria (or states of nature, individuals,...) into subsets whose elements are all indifferent for the decision maker.

Keywords: bi-capacity; bipolar scales; p-symmetry;

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