Computer Science > Computer Science and Game Theory

Preference aggregation theory without acyclicity: The core without majority dissatisfaction

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Acyclicity of individual preferences is a minimal assumption in social choice theory. We replace that assumption by the direct assumption that preferences have maximal elements on a fixed agenda. We show that the core of a simple game is nonempty for all profiles of such preferences if and only if the number of alternatives in the agenda is less than the Nakamura number of the game. The same is true if we replace the core by the core without majority dissatisfaction, obtained by deleting from the agenda all the alternatives that are non-maximal for all players in a winning coalition. Unlike the core, the core without majority dissatisfaction depends only on the players' sets of maximal elements and is included in the union of such sets. A result for an extended framework gives another sense in which the core without majority dissatisfaction behaves better than the core.

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