Stable decompositions of coalition formation games

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It is known that a coalition formation game may not have a stable coalition structure. In this study, we propose a new solution concept for these games, which we call "stable decomposition", and show that each game has at least one. This solution consists of a collection of coalitions organized in sets that "protect" each other in a stable way. When sets of this collection are singletons, the stable decomposition can be identified with a stable coalition structure. As an application, we study convergence to stability in coalition formation games.

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