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Coalition-proof Equilibria in a Voluntary Participation Game

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Abstract

We examine the coalition-proof equilibria of a participation game in a public good mechanism and study which Nash equilibria are achieved through the cooperative behavior of agents. The participation game may have multiple Nash equilibria, and various numbers of participants may be attained at the Nash equilibria. We provide sufficient conditions for the Nash equilibrium of the participation game to be a coalition-proof equilibrium and sufficient conditions under which the number of participants achieved at coalition-proof equilibria is unique. By applying these results, we more easily characterize the set of coalition-proof equilibria of the participation game with specific environments.