On Nonatomic Games

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Abstract A nonatomic game is a game with a nonatomic space of players which translates the fact that the influence of a single player's action on the payoff of the other player is negligible. They are essentially games with a continuum of players. This is intended, for example, to describe economic interactions with a large number of participants.

The aim of this presentation is to show that nonatomic games are a usefull framework to analyse interactions with a large number of players and to show that they may answer question raised by the Nash equilibrium such as existence of equilibrium in pure strategies, uniqueness of the equilibrium, rationality of the players.

First, we will briefly define n-player games and the Nash equilibrium. Then, we will present different nonatomic games appeared in dinstinct areas and their solution concept before to study the theoretical models. Finally we will show that nonatomic games are good approximations of games having a large number of players in which the influence of each player on the others players payoff function is vanishing.

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