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Spatial competitive games with disingenuously delayed positions. (English) Zbl 1425.91060
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Summary: During the last decades, spatial games have received great attention from researchers showing the behavior of populations of players over time in a spatial structure. One of the main factors which can greatly affect the behavior of such populations is the updating scheme used to apprise new strategies of players. Synchronous updating is the most common updating strategy in which all players update their strategy at the same time. In order to be able to describe the behavior of populations more realistically several asynchronous updating schemes have been proposed. Asynchronous game does not use a universal clock and players can update their strategy at different time steps during the play.

In this paper, we introduce a new type of asynchronous strategy updating in which some of the players hide their updated strategy from their neighbors for several time steps. It is shown that this behavior can change the behavior of populations but does not necessarily lead to a higher payoff for the dishonest players. The paper also shows that with dishonest players, the average payoff of players is less than what they think they get, while they are not aware of their neighbors' true strategy.

MSC:

[91A22](#) Evolutionary games

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[spatial games](#); [asynchronous updating](#); [delayed positions](#)

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