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AN EFFECTIVE PUNISHMENT FOR AN n-PERSON PRISONER'S DILEMMA ON A NETWORK

A. L. Grinikh, L. A. Petrosyan

The paper considers an n-person prisoner's dilemma game. We present a modification of this model for the network interaction of players. A set of grim trigger strategies is a Nash equilibrium in the repeated n-person prisoner's dilemma on a network, just as in the two-player game. However, even a slight deviation leads to the case where players get low payoffs in perpetuity without the possibility of returning to the Pareto optimal payoffs. A solution to this problem is proposed. The players' payoff functions in a game of an n-person prisoner's dilemma type on a network are described. A strategy involving a punishment on a limited interval of the game is proposed. The number of steps required for an effective punishment is found. An example of a network for this game is given. The number of steps for an effective punishment is found for the given example.

Keywords: prisoner's dilemma, network game, effective punishment.

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Aleksandra Leonidovna Grinikh, PhD student, Saint Petersburg State University, St. Petersburg, 198504 Russia, e-mail: st062331@student.spbu.ru .

Leon Aganesovich Petrosyan, Dr. Phys.-Math. Sci., Prof., Saint Petersburg State University, St. Petersburg, 198504 Russia, e-mail: l.petrosyan@spbu.ru .

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