

Evolution in Symmetric Incomplete Information Games

Erwin Amann, Alex Possajennikov

Speaker: Alex Possajennikov

e-mail: Alex.Possajennikov@nottingham.ac.uk

University of Nottingham

School of Economics

U.K.

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ABSTRACT

The paper compares two models of evolution in symmetric games with incomplete information. In the game each player can be of certain type. One model postulates that the type of a player is fixed and evolution works inside types leading to better strategies for this type. In the other model, the type of a player is determined randomly according to the specified distribution each time the player is called to play the game. In this model, type contingent strategies evolve. It is shown that the models can have different steady states. The difference comes from the fact that when the type of a player is fixed, the player cannot switch between certain strategies in the normal form representation of the game. Only in the other model the usual evolutionary game theory techniques for normal form games can be applied. We compare stability properties of steady states to find out whether the difference in steady states of the two models is important, that is, whether the sets of stable steady state of the two models coincide.