

## **Best response adaptation for role games**

Ulrich Berger

*Vienna University of Economics and Business Administration, Austria*

Imagine a population, where each individual can be in one of two roles. The role an individual is in, can change over time (think of owner - intruder e.g.). Individuals in different roles interact in a way that is represented by a bimatrix game. If each individual every now and then reviews its strategy and changes to the current best response, the strategy-state in this model obeys a system of differential equations and differential inclusions. In the case of zero-sum-games, where the gain of one player equals the loss of the other player, it is shown, that all orbits converge to a fixed point corresponding to the Nash equilibrium of the bimatrix game.