Professor Igor Konnov Kazan Federal University, Russia

Equilibrium Formulations of Relative Optimization Problems

Abstract: We consider relative or subjective optimization problems where the goal function and feasible set are dependent of the current state of the system under consideration. We propose equilibrium formulations of the corresponding problems that lead to general (quasi-)equilibrium problems. We propose to apply a regularized version of the penalty method for the general quasi-equilibrium problem, which enables us to establish existence results under weak coercivity conditions and replace the quasi-equilibrium problem with a sequence of the usual equilibrium problems. We describe several examples of applications and show that the subjective approach can be extended to non-cooperative game problems.