

# The Existence and The Stability for Equilibrium Problems with Lower and Upper Bounds

Cong Jun ZHANG   Zhen Min FENG

*College of Applied Mathematics, Nanjing University of Finance and Economics,*

*Nanjing 210046, P. R. China*

*E-mail: zcyjysxx@163.com*

**Abstract** In this paper, we study a class of equilibrium problems with lower and upper bounds. We obtain some existence results of equilibrium problems with lower and upper bounds by employing some classical fixed-point theorems. We investigate the stability of the solution sets for the problems, and establish sufficient conditions for the upper semicontinuity, lower semicontinuity and continuity of the solution set mapping  $S : \Lambda_1 \times \Lambda_2 \rightarrow 2^X$  in a Hausdorff topological vector space, in the case where a set  $K$  and a mapping  $f$  are perturbed respectively by parameters  $\lambda$  and  $\mu$ .