

# Densely defined equilibrium problems

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## **Abstract**

In the present work we deal with set-valued equilibrium problems for which we provide sufficient conditions for the existence of a solution. The conditions that we consider are imposed not on the whole domain, but rather on a self segment-dense subset of it, a special type of dense subset. As an application, we obtain a generalized Debreu-Gale-Nikaido type theorem, with a considerable weakened Walras law in its hypothesis. Further, we consider a non-cooperative  $n$ -person game and prove the existence of a Nash equilibrium, under assumptions that are less restrictive than the classical ones.