

Existence and localization of Nash equilibria for systems with partial variational structure

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Using fixed points arguments together with critical point techniques we obtain a hybrid existence result for a system with multiple operator equations, where only a part of them admit a variational structure.

The part of the solution of the equations which admit a variational structure are a Nash-type equilibrium for the corresponding energy functionals, and moreover they are localized in a bounded convex conical set defined by a norm and a concave upper semicontinuous functional.

This is achieved by an hybrid iterative scheme, partially based on Minty-Browder theorem and partially based on Ekeland variational principle. An abstract example of a system of differential equations with Dirichlet boundary conditions is given.

References

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