



Arthur Imperatore School of Sciences and Arts

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Parametric Variational Principles and Applications

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Abstract:

Parametric versions of Ekeland's and Borwein-Preiss' variational principles are presented, stating that under suitable assumptions, the minimum point of a perturbed function is a Caratheodory function of the parameters. These results are extensions of the author's results for the continuous case and for the case of random parameters. The proof relies on a lemma about continuous approximate minimizers of quasi-convex functions depending on a parameter. This lemma allows direct proofs of classical minimax theorems. Applications of the new principle to Nash equilibria and mathematical programming in abstract spaces will be given. Stochastic versions of some theorems from non-linear analysis and some applications to problems from optimal control and calculus of variations will be presented as well.

Refreshments will be provided.

For more information contact Darinka Dentcheva, Michael Zabrankin, Ionut Florescu, or call 201-216-5449.