Iteration-complexity of a Rockafellar's proximal method of multipliers for convex programming based on second-order approximations

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Resumo/Abstract:
This paper studies the iteration-complexity of a new primal-dual algorithm based on Rockafellar's proximal method of multipliers (PMM) for solving smooth convex programming problems with inequality constraints. In each step, either a step of Rockafellar's PMM for a second-order model of the problem is computed or a relaxed extragradient step is performed. The resulting algorithm is a (large-step) relaxed hybrid proximal extragradient (r-HPE) method of multipliers, which combines Rockafellar's PMM with the r-HPE method.