

OPTIMIZED FIRST-ORDER METHOD FOR DECREASING THE GRADIENT OF SMOOTH CONVEX FUNCTIONS

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ABSTRACT

This work optimizes the step coefficients of first-order methods in terms of the worst-case convergence bound of the gradient decrease of smooth convex functions, using the performance estimation problem approach [1]. The corresponding worst-case bound of the optimized method is optimal up to constant for large-dimensional smooth convex minimization [2]. We then illustrate that the resulting method, named OGM-G, has a computationally efficient form that is similar to the optimized gradient method (OGM) [3].

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