

Applications to convex minimization problems via a primal-dual splitting algorithm

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Abstract

The following presentation proposes applications of a primal-dual splitting algorithm, for solving systems of coupled monotone inclusions in Hilbert spaces. The numerical performances and effectiveness of the proposed iterative scheme are emphasized through several applications, like: Image processing, where a noisy and blurry image is cleared; Average consensus on colored networks, which consists in calculating the average of the value of each node in a recursive and distributed way; Image classification via support vector machines, where the aim is to construct a decision function with the help of training data, which should assign every new data correctly with a low misclassification rate; and Multifacility location problems, where the objective is to minimize the energy path between existing facilities and multiple new facilities, which have to be located among the existing ones.