

A general framework for ADMM acceleration

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The Alternating Direction Multipliers Method (ADMM) is a very popular algorithm for addressing the problem of minimizing a convex function subject to some constraints. Such problem is important from the application point of view, since it occurs in many fields of science and engineering. ADMM is a good numerical tool, but unfortunately it has the drawback that it can exhibit slow convergence. Thus, several approaches for accelerating it have been proposed. In this talk we present a general framework for acceleration of ADMM algorithm. In particular, we describe an algorithm in which it is possible to insert any acceleration step and still having convergence guarantee, thanks to a guard condition. Numerical results, in which we consider several acceleration strategies, show that this framework leads to an improvement with respect to the state of the art.