Relative-error inertial-relaxed inexact versions of Douglas-Rachford and ADMM splitting algorithms

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Resumo/Abstract:
This paper derives new inexact variants of the Douglas-Rachford splitting method for maximal monotone operators and the alternating direction method of multipliers(ADMM) for convex optimization. The analysis is based on a new inexact version of the proximal point algorithm that includes both an inertial step and overrelaxation. We apply our new inexact ADMM method to LASSO and logistic regression problems and obtain somewhat better computational performance than earlier inexact ADMM methods. Joint work with J. Eckstein, M. Geremia and J.G. Melo.