Accelerated Douglas-Rachford Operator Splitting Method for Variational Problems

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ABSTRACT
Operator splitting methods, such as Douglas-Rachford method, are often preferred for efficiency, when solving variational problems that are equivalent to finding a zero of the sum of two monotone operators. Douglas-Rachford method was originally developed as an alternating direction implicit (ADI) method for numerically solving the heat equation [1], and later was extended by Lion and Mercier [2] for finding a zero of the sum of two monotone operators. For computational efficiency, this talk presents an accelerated Douglas-Rachford method that has a fast rate of convergence in terms of the fixed-point residual. Numerical experiments on variational problems will be presented.

REFERENCES
