学术报告

Using generalized cross validation to select regularization parameter for total variation regularization problems

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Abstract： The regularization approach is used widely in image restoration problems. The visual quality of the restored image depends highly on the regularization parameter. In this paper, we develop an automatic way to choose a good regularization parameter for total variation (TV) image restoration problems. It is based on the generalized cross validation (GCV) approach and hence no knowledge of noise variance is required. Due to the lack of the closed-form solution of the TV regularization problem, difficulty arises in finding the minimizer of the GCV function directly. We reformulate the TV regularization problem as a minimax problem and then apply a first-order primal-dual method to solve it. Numerical results show that our method gives near optimal parameter, and excellent performance when compared with other state-of-the-art adaptive image restoration algorithms.

欢迎大家参加！