**Total variation-based image restoration model for color images**

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**Abstract**

This work proposes a mathematical model for removing noise from color images. In the proposed model, we apply the total variation regularization for gray-scale images and solve the associated variational problem by the so-called split Bregman method. Our experimental results on real and synthetic images show that 1) the quality of restored color images by the proposed model is reliable; and 2) the performance of the proposed numerical method is significantly better than the explicit time marching method.

**Keywords** : Finite difference, time marching, split bregman, variational model