

NON-CONVEX HYBRID TOTAL VARIATIONAL MODEL FOR IMAGE DENOISING

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ABSTRACT

In this paper, we propose new variational models for image denoising. These models contain the combination of the non-convex Total Variation (TV) with the non-convex higher order TV(HOTV) as a regularizer. The proposed models balance two regularizers to obtain a better approximation of the original image than the variational model with TV, HOTV and hybrid TV(the combination of TV and HOTV) regularizer. But the proposed models are non-convex and non-smooth. To overcome these difficulties, we adopt the Iterative Reweighted algorithm. We can confirm that the proposed models with the Iterative Reweighted algorithm attenuate staircase artifacts, preserve edges and better process smooth regions.

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