

# Recent advances on solving the Mumford–Shah model for discrete images

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The Mumford-Shah (MS) functional is an influential variational model in image segmentation and restoration. We propose a general formulation of the discrete counterpart of the MS functional, adapted to non-smooth penalizations. Such nonsmooth penalizations require the design of a new nonconvex algorithmic scheme, that we called SL-PAM, for which convergence guarantees are derived. Numerical experiments show that the proposed method is able to detect sharp contours and to reconstruct piecewise smooth approximations with low computational cost.

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