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A generalized Mumford-Shah Functional induced from Anisotropic diffusion on image segmentation—Minimizers and Gamma convergence.

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Abstract

The anisotropic diffusion on image segmentation is concerned in this talk. We investigate the behavior of anisotropic diffusion process and apply it on image segmentation which can be represented by a generalized Mumford-Shah functional. This functional contains three portions. The first is to measure the similarity for the initial image. The second employs the anisotropic diffusion process and it is related to the property of smoothness. The third tries to minimize the length of the edges. In this talk, we use the direct method to obtain the existence of minimizers. An approximation functional is used to show the corresponding Gamma convergence. Furthermore, the regularity of edge sets has been studied and the compact edge sets have no kinks under certain constraint.