数学与系统科学研究院

计算数学所网络学术报告

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报告题目：

An active contour model with local variance force term and its efficient minimization solver for multi-phase image

邀请人： 刘歆 研究员

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报告工具：腾讯会议（**ID：481-992-993**）

Abstract：

In this work, we propose an active contour model with a local variance force (LVF) term that can be applied to multi-phase image segmentation problems. With the LVF, the proposed model is very effective in the segmentation of images with noise. To solve this model efficiently, we represent the regularization term by characteristic functions and then design a minimization algorithm based on a modification of the iterative convolution-thresholding method (ICTM), namely ICTM-LVF. This minimization algorithm enjoys the energy-decaying property under some conditions and has highly efficient performance in the segmentation. To overcome the initialization issue of active contour models, we generalize the inhomogeneous graph Laplacian initialization method (IGLIM) to the multi-phase case and then apply it to give the initial contour of the ICTM-LVF solver. Numerical experiments are conducted on synthetic images and real images to demonstrate the capability of our initialization method, and the effectiveness of the local variance force for noise robustness in the multi-phase image segmentation.

欢迎大家参加！