数学与系统科学研究院

计算数学所学术报告

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报告题目：

Three-dimensional volume reconstruction using two-dimensional parallel slices

邀请人：　张硕　副研究员

报告时间：2019 年 8 月 7 日（周三）

下午 15:00

报告地点：　科技综合楼三层

301 报告厅

Abstract:

In this talk, we propose a partial differential equation model for three-dimensional (3-D) volume reconstruction from 2-D slices. The proposed method is based on the modified Cahn-Hilliard equation for 3-D binary inpainting. In order to accurately satisfy the constraints while obtaining a smooth result, we apply a presmoothing procedure based on anisotropic diffusion to the slices. We discuss the justification for our inpainting model using a Gamma-convergence analysis. After splitting a grayscale image into binary channels, we perform multichannel Cahn-Hilliard inpainting. Then we adopt smoothing and a shock filter as postprocessing to combine the binary inpainting results. We then employ our method to reconstruct a 3-D human body from parallel slices of CT images.

欢迎大家参加！