

## <<成像中的变分法>>

### 图书基本信息

书名 : <<成像中的变分法>>

13位ISBN编号 : 9787510058424

10位ISBN编号 : 7510058422

出版时间 : 2013-6

出版时间 : 世界图书出版公司北京公司

版权说明 : 本站所提供下载的PDF图书仅提供预览和简介 , 请支持正版图书。

更多资源请访问 : <http://www.tushu007.com>

## <<成像中的变分法>>

### 内容概要

本书致力于研究成像处理中的方法，本着数学的严谨，用逆问题的观点研究这个科目。更重要的，本书从确定性、几何和随机的观点研究变分法，架起了成像分析中规范理论和逆问题的桥梁，图形分析中的案例来解释变分法，如去噪、热声学、计算断层照相法中的应用，讨论了非凸变量微积分、形态学分析和平集之间的联系。

分析变分法包括变分法的经典分析、现代分析如G规范性质和非凸变量分析，运用数值例子提高学习这本书的研究生和应用数学的研究人员理论水平。

本书可以作为成像处理及和逆过程课程的一本很好的研究生水平的教程，也可以是学习规范理论的补充教程。

成像处理领域的计算机专家也会从这本书中受益。

目次：（一）成像基础：成像案例；成像和噪音模型；（二）正规化：逆问题解的变分规范化方法；降噪中的凸规范化方法；非凸正规化的变量微积分；半群理论和尺度空间；逆尺度空间；（三）数学基础：泛函分析；若微分函数；凸分析和变量微积分。

读者对象：数学专业、计算机专业的本科生、研究生和相关的科研人员。

## <<成像中的变分法>>

### 作者简介

作者:(奥)斯科泽

## &lt;&lt;成像中的变分法&gt;&gt;

## 书籍目录

Part Fundamentals of Imaging 1 Case Examples of Imaging 1.1 Denoising 1.2 Chopping and Nodding 1.3 Image Inpainting 1.4 X-ray-Based Computerized Tomography 1.5 Thermoacoustic Computerized Tomography 1.6 Schlieren Tomography 2 Image and Noise Models 2.1 Basic Concepts of Statistics 2.2 Digitized (Discrete) Images 2.3 Noise Models 2.4 Priors for Images 2.5 Maximum A Posteriori Estimation 2.6 MAP Rstimation for Noisy Images Part Regularization 3 Variational Regularization Methods for the Solution of Inverse Problems 3.1 Quadratic Tikhonov Regularization in Hilbert Spaces 3.2 Variational Regularization Methods in Banach Spaces 3.3 Regularization with Sparsity Constraints 3.4 Linear Inverse Problems with Convex Constraints 3.5 Schlieren Tomography. 3.6 Further Literature on Regularization Methods for Inverse Problems 4 Convex Regularization Methods for Denoising 4.1 The Number 4.2 Characterization of Minimizers 4.3 One-dimensional Results 4.4 Taut String Algorithm 4.5 Mumford-Shah Regularization 4.6 Recent Topics on Denoising with Variational Methods 5 Variational Calculus for Non-convex Regularization 5.1 Direct Methods 5.2 Relaxation on Sobolev Spaces 5.3 Relaxation on BV 5.4 Applications in Non-convex Regularization 5.5 One-dimensional Results 5.6 Examples 6 Serru-group Theory and Scale Spaces 6.1 Linear Semi-group Theory 6.2 Non-linear Semi-groups in Hilbert Spaces 6.3 Non-linear Semi-groups in Banach Spaces 6.4 Axiomatic Approach to Scale Spaces 6.5 Evolution by Non-convex Energy Functionals 6.6 Enhancing 7 Inverse Scale Spaces 7.1 Iterative Tikhonov Regularization 7.2 Iterative Regularization with Bregman Distances 7.3Recent Topics on Evolutionary Equations for Inverse Problems Part Mathematical Foundations 8 Functional Analysis 8.1 General Topology 8.2 Locally Convex Spaces 8.3 Bounded Linear Operators and Functionals 8.4 Linear Operators in Hilbert Spaces 8.5 Weak and Weak Topologies 8.6 Spaces of Differentiable Functions 9 Weakly Differentiable Functions 9.1 Measure and Integration Theory 9.2 Distributions and Distributional Derivatives 9.3 Geometrical Properties of Functions and Domains 9.4 Sobolev Spaces 10 Convex Analysis and Calculus of Variations References Nomenclature Index

## &lt;&lt;成像中的变分法&gt;&gt;

## 章节摘录

版权页：插图： In this case, the function  $p_A$  is called the probability density of  $A$ . Assume that  $\Omega$  is a sampling space with probability distribution  $P$ . An  $n$ -dimensional random vector  $\omega = (\omega_1, \dots, \omega_n)$  is a measurable function  $\omega : \Omega \rightarrow \mathbb{R}^n$ . The joint probability  $P(\omega)$  of  $\omega$  is the measure on  $\mathbb{R}^n$  defined by  $P(\omega) := P(\{\omega^{-1}(A)\})$ ,  $A \in \mathcal{B}(\mathbb{R}^n)$  measurable. The probability density of a random vector  $\omega$  is defined analogously to the probability density of a random variable. If  $A$  is an  $n$ -dimensional random vector on  $\Omega$ , then its components  $\omega_i, 1 < i < n$ , are themselves random variables on  $\Omega$ . We say that the random vector  $\omega$  consists of independent random variables  $\omega_i$ , if  $P(\omega_1 \in A_1 \times \dots \times \omega_n \in A_n) = P_1(A_1) \dots P_n(A_n)$ ,  $A_1, \dots, A_n \in \mathcal{B}(\mathbb{R})$  measurable, where  $P_i$  are the probability distributions of  $\omega_i$ ,  $1 \leq i \leq n$ . If additionally  $P_i = P_j$  for all  $1 \leq i, j \leq n$ , then  $\omega$  consists of independent and identically distributed, in short i.i.d., random variables.

## <<成像中的变分法>>

### 编辑推荐

《成像中的变分法(英文)》由世界图书出版公司北京公司出版。

## <<成像中的变分法>>

### 版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>