

<<科学计算中的蒙特卡罗策略>>

图书基本信息

书名：<<科学计算中的蒙特卡罗策略>>

13位ISBN编号：9787506272582

10位ISBN编号：750627258X

出版时间：2005-6

出版时间：世界图书出版公司

作者：J.S.Liu

页数：343

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>

## <<科学计算中的蒙特卡罗策略>>

### 内容概要

An early experiment that conceives the basic idea of Monte Carlo computation is known as "Buffon's needle", first stated by Georges Louis Leclerc Comte de Buffon in 1777. In this well-known experiment, one throws a needle of length  $l$  onto a flat surface with a grid of parallel lines with spacing  $d$ . It is easy to compute that, under ideal conditions, the chance that the needle will intersect one of the lines is  $\frac{2l}{d}$ . Thus, if we let  $p_N$  be the proportion of "intersects" in  $N$  throws, we can have an estimate of  $\frac{2l}{d}$  as  $\frac{p_N N}{2l}$  will "converge" to  $\frac{2l}{d}$  as  $N$  increases to infinity.

<<科学计算中的蒙特卡罗策略>>

书籍目录

Preface 1 Introduction and Examples 1.1 The Need of Monte Carlo Techniques 1.2 Scope and Outline of the Book 1.3 Computations in Statistical Physics 1.4 Molecular Structure Simulation 1.5 Bioinformatics: Finding Weak Repetitive Patterns 1.6 Nonlinear Dynamic System: Target Tracking 1.7 Hypothesis Testing for Astronomical Observations 1.8 Bayesian Inference of Multilevel Models 1.9 Monte Carlo and Missing Data Problems 2 Basic Principles: Rejection, Weighting, and Others 2.1 Generating Simple Random Variables 2.2 The Rejection Method 2.3 Variance Reduction Methods 2.4 Exact Methods for Chain-Structured Models 2.4.1 Dynamic programming 2.4.2 Exact simulation 2.5 Importance Sampling and Weighted Sample 2.5.1 An example 2.5.2 The basic idea 2.5.3 The "rule of thumb" for importance sampling.....3 Theory of Sequential Monte Carlo 4 Sequential Monte Carlo in Action 5 Metropolis Algorithm and Beyond 6 The Gibbs Sampler 7 Cluster Algorithms for the Ising Model 8 General Condition I Sampling 9 Molecular Dynamics and Hybrid Monte Carlo 10 Multilevel Sampling and Optimization Methods 11 Population-Based Monte Carlo Methods 12 Markov Chains and Their Convergence 13 Selected Theoretical Topics A Basics in Probability and Statistics References Author Index Subject Index

<<科学计算中的蒙特卡罗策略>>

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>