

<<交互作用流的超过程>>

图书基本信息

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### 内容概要

This paper is divided into 7 chapters . The central theme of these lectures is the construction and study of a new class of superprocesses named as "superprocesses arising from interacting stochastic flows" (abbreviated to SAISF).

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## 章节摘录

This paper is divided into 7 chapters. The central theme of these lectures is the construction and study of a new class of superprocesses named as "superprocesses arising from interacting stochastic flows" (abbreviated to SAISF). In Chapter 1 -Chapter 2, we will introduce some elementary theories about measure-valued processes. In Chapter 3, we will construct a new class of superprocesses named as "superprocesses arising from interacting stochastic flows" (abbreviated to SAISF). These superprocesses are characterized by their generators as: This class of superprocesses is the unified setting of some new born classes of superprocesses considered by many authors in their papers. Here we use the duality method developed by Dawson, Li and Wang to prove their strong Markov property and the technique of branching particle system approximation to prove their existence. In the end of this chapter, we shall give some variance of this class of superprocesses. In Chapter 4, we shall investigate its probabilistic properties. Firstly, we shall prove the atomic property of the SAISF if its parameters satisfy the condition that  $a_p(x, x) = c_p'q(x)$  for any  $x$  in Section 4.1. Secondly, we will deduce the stochastic partial differential equation associated with 1-dimensional SAISF in Section 4.2. Thirdly, we will consider some rescaled limit for the SAISF under some conditions. In Chapter 5, we will use "piecing" technique to investigate the SAISF with branching mechanism depending on population size and general superprocesses with branching mechanism depending on population size. The limit duality method and "piecing" technique are main methods in this chapter. In Chapter 6, the stochastic flow of mappings generated by a Feller convolution semigroup on a compact metric space is studied. This kind of flow is the generalization of superprocesses of stochastic flows and stochastic diffeomorphism induced by the strong solutions of stochastic differential equations. &hellip;&hellip;

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