



巢湖学院
Chaohu University

概率及其应用研讨会 会议手册

会议时间：2024年1月6日（星期六）上午8:30

会议日程：

时间	报告人	报告题目	主持人
8:45-8:55		开幕式	陈佩树
9:00-9:50	苏中根	Probabilistic Analysis for Length of the Longest Increasing Subsequences	瞿萌
10:00-10:50	陈振龙	Dimension and Measure of the Range and Graph of Space-Time Anisotropic Gaussian Random Fields	
休息 10 分钟			
11:00-11:30	刘晓	Maximizing insurer's firm value by dividend and reinsurance with a random time horizon	马永梅
11:40-12:10	严恒普	Monotone B-spline support vector quantile regression	

主办单位：巢湖学院数学与大数据学院

报告摘要

Probabilistic Analysis for Length of the Longest Increasing Subsequences

苏中根（浙江大学）

Abstract: The study of longest increasing subsequences (LIS) dates back to Erdos and Szekeres (1935). Now it is a well-studied object in random combinatorial optimization and random growth processes. In this talk we will briefly review some remarkable results on the asymptotic distribution theory of LIS, like the law of large numbers (Hammersley's solution to Ulam's problem), the central limit theorems (Tracy-Widom law) and large deviation principles. We will also report a recent work on the law of the iterated logarithm for Poissonized version of LIS.

Dimension and Measure of the Range and Graph of Space-Time Anisotropic

Gaussian Random Fields

陈振龙（浙江工商大学）

Abstract: Let $X = \{X(t), t \in R^N\}$ be a centered space-time anisotropic Gaussian random field with values in R^d with stationary increments, whose components are independent but may not be identically distributed. Under certain mild conditions, we determine the exact Hausdorff measure functions, Hausdorff and packing dimensions for the range set $X([0, 1]^N)$ and graph set $GrX([0, 1]^N)$. Our results extend corresponding results for fractional Brownian motion, time-anisotropic and space-isotropic Gaussian random fields..

Maximizing insurer's firm value by dividend and reinsurance with a random time horizon

刘 晓（安徽师范大学）

Abstract: We investigate optimal dividend and reinsurance policies for an insurer with a random time horizon. The goal of the insurer is to maximize the value of the insurance company when the random time or the ruin time arrives. This value consists of three parts: the dividends up to the random time or the ruin time, the surplus at the random time or the ruin time and the company's brand value. We identify the insurer's joint optimal strategies using stochastic control methods. The results reveal that managers should consider no reinsurance if and only if the brand value or the surplus is too high, less reinsurance is bought when the surplus increases, and dividends are always distributed using the barrier strategy.

Monotone B-spline support vector quantile regression

严恒普 (巢湖学院)

Abstract: Support vector quantile regression (SVQR) has attracted a lot of researchers attention and research in the past ten years because of its advantages such as the high efficiency of support vector machines and the robustness of quantile regression, as well as a large number of related literature on its application and theoretical nature. However, some functions are monotonic in practical application, and its necessary to add additional restrictions to the model to ensure its monotony. In this talk, by using the quadratic B-spline as the base function and restrict its 1st derivative nonnegative, a monotonic B-spline support vector quantile regression (MBSVQR) method is proposed and strict monotony can be achieve. On the other hand, we select the hyperparameters through the leave-one Cross Validation (CV). The simulation and application show that MBSVQR and monotonic B-spline quantile regression (MBQR) are comparable, and under certain circumstances, MBSVQR is superior to SVQR, monotonic support vector quantile regression (MSVQR) and MBQR.

报告人简介

苏中根 浙江大学教授、博士生导师。1995 年获复旦大学博士学位，主要从事概率极限理论及其应用研究，在概率论主流专业杂志上发表学术论文近 60 篇，出版教材和专著 4 本。现已主持（完成）国家自然科学基金面上项目 5 项、教育部博士点专项基金(导师类)项目 1 项、浙江省自然科学基金杰出青年团队项目 1 项等。曾获教育部科技进步二等奖（3/3），浙江省科技进步（自然科学）二等奖（2/2），获宝钢优秀教师奖。与林正炎、陆传荣合作编著的《概率极限理论基础》（第一版）2002 年荣获普通高等学校优秀教材一等奖，2021 年（第二版）获首届全国优秀教材二等奖；与林正炎、张立新合作编著的《概率论》曾被列为普通高等教育“十一五”、“十二五” 国家级规划教材，主讲的《概率论（H）》课程 2022 年被认定为国家级一流线下课程。

陈振龙 浙江工商大学教授，博士生导师，浙江省数学学会常务理事,中国概率统计学会理事，入选省普通高校跨世纪学术骨干，省 151 新世纪高层次人才，省高校创新团队负责人，浙江工商大学西湖学者拔尖人才，国家一流专业和国家一流课程负责人。主要研究领域有：随机过程与风险管理、随机场与随机分形等。主持国家自然科学基金面上基金，教育部人文社科基金，浙江省自然科学基金等项目十多项。

出版学术专著 3 部，在《Sci China Math》、《J Theor Probab》、《Economics Letters》、《统计研究》等国内外学术刊物发表论文 80 多篇。

刘 晓 安徽师范大学副教授、博士、硕士生导师。主持安徽省自然科学基金和安徽高校自然科学研究重点项目。主要从事风险理论研究工作，在 *Journal of Systems Science and Complexity*、*Statistics and Probability Letters* 等重要期刊发表相关论文多篇。

严恒普 讲师，巢湖学院数学与大数据学院专任教师，从事数据挖掘、物流控制优化等研究，获巢湖学院第十届教学基本功大赛二等奖，省级同课异构教学三等奖。