



## PDE approach in infinite-dimensional complex analysis

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张旭，四川大学教授，主要研究控制论和无限维分析，其工作发表在SIAM Review、CPAM和JEMS等刊，已在Springer出版专著3部。曾获国家自然科学基金二等奖（2013年）和美国工业与应用数学学会“SIGEST Award”（2018年）等，先后担任（曾任）《中国科学：数学》、SIAM J. Control Optim.、Annual Reviews in Control、ESAIM: COCV和Math. Control Relat. Fields等刊编委、副主编或主编，并应邀在2010年国际数学家大会作45分钟报告。



Abstract: The classical  $L^2$  approach is a basic tool in complex analysis of several variables. Naturally, one expected to extend it to infinite-dimensional complex analysis, but this is a longstanding unsolved problem. The main purpose in this work is to establish  $L^2$  estimates and existence theorems for the  $\bar{\partial}$  operators in general pseudo-convex domains of infinite dimensions. For this purpose, we introduce several new concepts and techniques, which have independent interest to be adopted to study some other problems in infinite-dimensional analysis. (This is a joint work with Zhouzhe Wang and Jiayang Yu).

### 讲座时间:

2024. 03. 06 周三 上午10:00-11:00

会议地点: ZOOM会议室 会议ID: 354 143 7366 密码: 123456

### 主办单位:

中科院数学与系统科学研究院应用数学所

北京理工大学数学与统计学院



# UNITED SEMINAR OF THE DEPARTMENT OF PROBABILITY THEORY OF LOMONOSOV MOSCOW STATE UNIVERSITY

This is the page of the United Seminar of the Department of Probability Theory of the Faculty of Mechanics and Mathematics of Moscow State University. The permanent website of the seminar is here. The seminar is a continuation of the research seminar of the Department of Probability Theory under the leadership of A.N. Kolmogorov and B.V. Gnedenko.

The seminar is held online every Wednesday from 16:45 to 17:45 Moscow time. 21:45 to 22:45 Beijing time.

Permanent link to the Zoom room: <http://bit.ly/3HY8K6d>

Room ID: 844 6792 3144

Access code: 697663

Head of the seminar: academician of the RAS, professor Albert N. Shiryaev

Coordinator of the seminar in spring 2023: professor Elena B. Yarovaya



## Upcoming reports

06 March, 16:45 MSK

**Zhonggen Su**, School of Mathematical Sciences, Zhejiang University, Hangzhou, China

### **Three-parameter distributional approximations for sums of locally dependent random variables**

Consider a finite family of locally dependent non-negative integer-valued random variables with finite third order moments, and denote by  $W$  their sum. There have been a number of research works on computing the distributions of  $W$  in literature. In this talk I shall report a recent work on three-parameter distributional approximation for  $W$ . Specifically speaking, denote by  $M$  a three parameter random variable, say the mixture of Bernoulli binomial distribution and Poisson distribution, the mixture of negative binomial distribution and Poisson distribution or the mixture of Poisson distributions. We use Stein's method to establish general upper error bounds for the total variation distance between  $W$  and  $M$ , where three parameters in  $M$  are uniquely determined by the first three moments of  $W$ . As a direct consequence, we obtain a discretized normal approximation for  $W$ . To illustrate, we study in detail a few of well-known examples, among which are counting vertices of all edges point inward, birthday problem, counting monochromatic edges in uniformly colored graphs, and triangles in the Erdős–Rényi random graph. Through delicate analysis and computations, we obtain sharper upper error bounds than existing results. This talk is based on recent joint works with Xiaolin Wang.