同济大学
TONGJI UNIVERSITY

第四届多重 zeta 值及相关领域国际研讨会

The 4th International Workshop on Multiple Zeta Values and Related Fields

金子昌信教授六十五岁生日纪念国际会议

International Conference in Honor of Prof. Masanobu Kaneko's 65th Birthday

同济大学　上海　2025 年 7 月 12 日-7 月 16 日

Tongji University　Shanghai　July 12 – July 16, 2025

第四届多重zeta值及相关领域国际研讨会

会议通知

尊敬的数学界各位同仁：

大家好!

为促进多重zeta值与L-函数及相关领域的学术交流，“第四届多重zeta值及相关领域国际研讨会”将于2025年7月12日至16日在上海举行。本次研讨会由同济大学主办，由南昌航空大学、中南大学、华东师范大学、浙江理工大学、安徽师范大学协办。

研讨会将主要展示与交流近年来国内外学者在多重zeta值与L-函数相关领域取得的科研成果，对多重zeta值与L-函数相关领域的前沿方法及理论、最新发展及未来趋势进行广泛而深入的交流，共同探讨并促进多重zeta值与L-函数研究领域的进一步发展。

欢迎国内外同行学者莅临!

研讨会有关事项通知如下：

一、会议时间：2025年7月12日至16日。7月12日（周六）下午报到，7月13日至15日学术交流，7月16日离会。

二、会议地点： 注册地点为上海同济君禧大酒店（上海市杨浦区彰武路50号），会议地点为同济大学四平路校区致远楼108（上海市杨浦区四平路1239号）。

三、会议报名：见研讨会网址链接https://multizetacafe.github.io/shanghai2025/。

四、相关说明： 本次会议不收取注册费，会议期间食宿由会务组统一安排，参会者住宿费用和交通费用自理。

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同济大学数学科学学院

2025年4月25日

报告人 Keynote Talks

Kam Cheong Au, University of Cologne （区锦昌, 科隆大学）
Henrik Bachmann, Nagoya University （名古屋大学）
Annika Burmester, Nagoya University （名古屋大学）
Ku-Yu Fan, Nagoya University （范谷瑜, 名古屋大学）
Hidekazu Furusho, Nagoya University （古庄英和, 名古屋大学）
Li Guo, Rutgers University （郭锂, 罗格斯大学）
Minoru Hirose, Kagoshima University （広瀬稔, 鹿儿岛大学）
Shaofang Hong, Sichuan University （洪绍方, 四川大学）
Masanobu Kaneko, Kyushu University （金子昌信, 九州大学）
Jiangtao Li, Central South University （李江涛, 中南大学）
Yasuo Ohno, Tohoku University （大野泰生，日本东北大学）
Masataka Ono, Senshu University （小野雅隆，専修大学）
Zhi Qi, Zhejiang University （齐治, 浙江大学）
Simon Rutard, Nagoya University （名古屋大学）
Shingo Saito, Kyushu University （斎藤新悟, 九州大学）
Nobuo Sato, National Taiwan University （佐藤信夫, 国立台湾大学）
Qingfeng Sun, Shandong University （孙庆峰, 山东大学）
Zhi-Wei Sun, Nanjing University （孙智伟, 南京大学）
Takeshi Shinohara, Nagoya University （篠原健, 名古屋大学）
Koji Tasaka, Kindai University （田坂浩二, 近畿大学）
Khalef Yaddaden, Nagoya University （名古屋大学）
Chenglong Yu, YMSC （余成龙，清华大学丘成桐数学科学中心）
Jinbo Yu, Nagoya University （余锦波, 名古屋大学）

会务组 Organizing Committee

Jiahao Cheng, Nanchang Hangkong University （程家豪, 南昌航空大学）
Jiangtao Li, Central South University （李江涛, 中南大学）
Zhonghua Li, Tongji University （李忠华, 同济大学）
Ma Luo, East China Normal University （罗马, 华东师范大学）
Weiping Wang, Zhejiang Sci-Tech University （王伟平, 浙江理工大学）
Ce Xu, Anhui Normal University （徐策, 安徽师范大学）
Jianqiang Zhao, The Bishop's School （赵健强,美国毕夏普学校）

会议议程 Workshop Schedule

会议时间: 2025年7月12至7月16日

Conference Time: July 12 - July 16, 2025

注册地点: 上海同济君禧大酒店（上海市杨浦区彰武路50号）

Registration Venue: Shanghai Tongji Junxi Hotel (No. 50, Zhangwu Road, Yangpu District, Shanghai)

会议地点: 同济大学四平路校区致远楼108（上海市杨浦区四平路1239号）

Conference Venue: Room 108, Zhiyuan Building, Siping Road Campus of Tongji University (No. 1239, Siping Road, Yangpu District, Shanghai).

7月12日	14:00-21:00	注册 Registration	酒店大厅 Hotel Lobby
July 12	18:00-20:30	晚餐 Dinner	一楼咖啡厅 Lobby Café
7月13日 **July 13**	08:30-08:35	开幕式 Opening Ceremony	致远楼 108 Zhiyuan 108
	08:35-09:00	照相 Photo	
	09:00-09:30	报告 Keynote Talk	致远楼108 Zhiyuan 108
	09:30-10:00	报告 Keynote Talk	致远楼108 Zhiyuan 108
	10:00-10:20	茶歇 Tea Break	
	10:20-10:50	报告 Keynote Talk	致远楼108 Zhiyuan 108
	10:50-11:20	报告 Keynote Talk	致远楼108 Zhiyuan 108
	11:20-11:50	报告 Keynote Talk	致远楼108 Zhiyuan 108
	12:00-13:30	午餐 Lunch	学苑饮食广场一楼 Dining Plaza, 1F, Xue Yuan
	14:30-15:00	报告 Keynote Talk	致远楼108 Zhiyuan 108
	15:00-15:30	报告 Keynote Talk	致远楼108 Zhiyuan 108
	15:30-16:00	报告 Keynote Talk	致远楼108 Zhiyuan 108
	16:00-16:20	茶歇 Tea Break	
	16:20-16:50	报告 Keynote Talk	致远楼108 Zhiyuan 108
	16:50-17:20	报告 Keynote Talk	致远楼108 Zhiyuan 108
	17:20-17:50	报告 Keynote Talk	致远楼108 Zhiyuan 108
	18:30-20:30	晚餐 Dinner	三楼三号厅 Hall 3, 3rd Floor

7月14日 **July 14**	08:30-09:00	报告 Keynote Talk	致远楼108 Zhiyuan 108
	09:00-09:30	报告 Keynote Talk	致远楼108 Zhiyuan 108
	09:30-10:00	报告 Keynote Talk	致远楼108 Zhiyuan 108
	10:00-10:20	茶歇 Tea Break	
	10:20-10:50	报告 Keynote Talk	致远楼108 Zhiyuan 108
	10:50-11:20	报告 Keynote Talk	致远楼108 Zhiyuan 108
	11:20-11:50	报告 Keynote Talk	致远楼108 Zhiyuan 108
	12:00-13:30	午餐 Lunch	学苑饮食广场一楼 Dining Plaza, 1F, Xue Yuan
	14:30-15:00	报告 Keynote Talk	致远楼108 Zhiyuan 108
	15:00-15:30	报告 Keynote Talk	致远楼108 Zhiyuan 108
	15:30-16:00	报告 Keynote Talk	致远楼108 Zhiyuan 108
	16:00-16:20	茶歇 Tea Break	
	16:20-16:50	报告 Keynote Talk	致远楼108 Zhiyuan 108
	16:50-17:20	报告 Keynote Talk	致远楼108 Zhiyuan 108
	17:20-17:50	报告 Keynote Talk	致远楼108 Zhiyuan 108
	18:30-20:30	晚餐 Dinner	一楼咖啡厅 Lobby Café
7月15日 July 15	自由讨论 Discussion		
7月16日 July 16	离会 Meeting Adjourned		

7月13日 July 13　致远楼108 Zhiyuan 108		
开幕式Opening Ceremony　08:30-08:35		
照相Photo　08:35-09:00		
主持人 **Chair**	时间 **Time**	报告人与报告题目 **Keynote Speaker and Lecture Title**
Bin Zhang **张 斌**	09:00-09:30	**Masanobu Kaneko (金子昌信)** "True analogues" of depths 2 and 3 zeta values in the ring of finite multiple zeta values *Kyushu University* (九州大学)
	09:30-10:00	**Masataka Ono (小野雅隆)** The Kaneko-Zagier conjecture for general integer indices *Senshu University* (専修大学)
	10:00-10:20	茶歇 Tea Break
Ce Xu **徐 策**	10:20-10:50	**Zhi-Wei Sun (孙智伟)** Duality Principle for Ramanujan-type and Zeilberger-type series *Nanjing University* (南京大学)
	10:50-11:20	**Shaofang Hong (洪绍方)** On the sums of polynomial units modulo n *Sichuan University* (四川大学)
	11:20-11:50	**Ku-yu Fan (范谷瑜)** A map between arborifications of multiple zeta values *Nagoya University* (名古屋大学)
	12:00-13:30	午餐 Lunch

主持人 **Chair**	时间 **Time**	报告人与报告题目 **Keynote Speaker and Lecture Title**
Weiping Wang 王伟平	14:30-15:00	**Yasuo Ohno (大野泰生)** Generalized duality formula for Schur MZVs *Tohoku University* (东北大学)
	15:00-15:30	**Henrik Bachmann** $\mathfrak{sl}_2$-algebras and multiple Eisenstein series *Nagoya University* (名古屋大学)
	15:30-16:00	**Jinbo Yu (余锦波)** Generalization of Schur multiple zeta values and related Hopf algebras *Nagoya University* (名古屋大学)
	16:00-16:20	茶歇 Tea Break
Yuk-Kam Lau 刘旭金	16:20-16:50	**Koji Tasaka (田坂浩二)** Recent developments of multiple Eisenstein series of level N *Kindai University* (近畿大学)
	16:50-17:20	**Qingfeng Sun (孙庆峰)** A zero-density estimate for GL(3) L-functions and its application *Shandong University* (山东大学)
	17:20-17:50	**Zhi Qi (齐 治)** Non-vanishing of Rankin-Selberg Special L-values *Zhejiang University* (浙江大学)
	18:30-20:30	晚餐 Dinner

7月14日 July 14　致远楼108 Zhiyuan 108		
主持人 Chair	时间 Time	报告人与报告题目 Keynote Speaker and Lecture Title
Xing Gao 高 兴	08:30-09:00	**Li Guo (郭锂)** Cyclotomic conical zeta values and cyclotomic multiple zeta values *Rutgers University-Newark* (罗格斯大学纽瓦克分校)
	09:00-09:30	**Chenglong Yu (余成龙)** Monodromy of Lauricella functions and higher dimensional generalizations *Yau Mathematical Sciences Center* (清华大学丘成桐数学科学中心)
	09:30-10:00	**Jiangtao Li (李江涛)** Diophantine approximation of multiple zeta-star values *Central South University* (中南大学)
	10:00-10:20	茶歇 Tea Break
Yingnan Wang 王英男	10:20-10:50	**Nobuo Sato (佐藤信夫)** Conical Zeta Values *National Taiwan University* (国立台湾大学)
	10:50-11:20	**Shingo Saito (斎藤新悟)** t-adic symmetric multiple zeta values for indices in which 1 and 3 appear alternately *Kyushu University* (九州大学)
	11:20-11:50	**Annika Burmester** Multiple (q-)zeta values and free post-Lie structures *Nagoya University* (名古屋大学)
	12:00-13:30	午餐 Lunch

主持人 **Chair**	时间 **Time**	报告人与报告题目 **Keynote Speaker and Lecture Title**
Ma Luo **罗 马**	14:30-15:00	**Hidekazu Furusho(古庄英和)** Various Lie algebras related to the motivic Galois Lie algebra *Nagoya University* (名古屋大学)
	15:00-15:30	**Minoru Hirose (広瀬稔)** On the dimension of motivic cyclotomic multiple zeta values *Kagoshima University* (鹿儿岛大学)
	15:30-16:00	**Khalef Yaddaden** A proof of a conjecture of Zhao on weight 2 distribution relations of cyclotomic multiple zeta values *Nagoya University* (名古屋大学)
	16:00-16:20	茶歇 Tea Break
Jie Wu **吴 杰**	16:20-16:50	**Takeshi Shinohara (篠原健)** Shuffle product for multiple zeta functions *Nagoya University* (名古屋大学)
	16:50-17:20	**Simon Rutard** Values at non-positive integers of twisted multiple zeta-functions *Nagoya University* (名古屋大学)
	17:20-17:50	**Kam Cheong Au (区锦昌)** Witten zeta function at negative integers *University of Cologne* (科隆大学)
	17:30-19:00	晚餐 Dinner

Witten zeta function at negative integers

Kam Cheong Au（区 锦昌）
University of Cologne（科隆大学）
Email: kau1@smail.uni-koeln.de

Abstract The Witten zeta function for a simple Lie algebra $\mathfrak{g}$ is defined by the Dirichlet series

$$\zeta_{\mathfrak{g}}(s) := \sum_{\rho} \frac{1}{(\dim \rho)^s},$$

where ρ ranges over all irreducible representations of $\mathfrak{g}$. It has been popularized by Zagier to illustrate its special values at positive even integers. Although not as nice as L-functions, it still satisfies several non-trivial properties with interesting consequences. In this talk, we prove a conjecture which says $\zeta_{\mathfrak{g}}(s)$ vanishes at negative even integers, we also mention a connection to some non-trivial identities about Riemann zeta values and Eisenstein series.

$\mathfrak{sl}_2$-algebras and multiple Eisenstein series

Henrik Bachmann
Nagoya University（名古屋大学）
Email: henrikbachmann85@gmail.com

Abstract An $\mathfrak{sl}_2$-algebra is an algebra A together with an injective Lie algebra homomorphism from the 3-dimensional Lie algebra $\mathfrak{sl}_2$ into its Lie algebra of derivations $\mathrm{Der}(A)$. A classical example of such an algebra is the algebra of quasimodular forms, which is equipped with three prominent derivations satisfying the same commutator relations as the generators of $\mathfrak{sl}_2$. Quasimodular forms, on the other hand, also have a, partly not fully understood, connection to the theory of multiple zeta values (MZVs). This connection can be explained by a hybrid of MZVs and classical Eisenstein series, called multiple Eisenstein series. The algebra of multiple Eisenstein series contains the algebra of quasimodular forms as a subalgebra. In this talk, we present a conjectural picture suggesting that the $\mathfrak{sl}_2$-algebra structure of quasimodular forms has a natural extension to the algebra of multiple Eisenstein series.

Multiple (q-)zeta values and free post-Lie structures

Annika Burmester
Nagoya University（名古屋大学）
Email: aburmester@math.uni-bielefeld.de

Abstract We begin by introducing post-Lie structures on free Lie algebras and the associated Grossman-Larson product, which endows the universal enveloping algebra with a Hopf algebra structure. This general framework is then applied to two settings: the Ihara bracket, arising in the study of multiple zeta values, and Ecalle's ari bracket, relevant in the context of a depth-graded version of multiple q-zeta values. If time permits, we also discuss recent progress towards a Lie bracket for multiple q-zeta values, which do not carry a natural depth grading.

A map between arborifications of multiple zeta values

Ku-yu Fan（范 谷瑜）
Nagoya University（名古屋大学）
Email: abc940605@gmail.com

Abstract Based on the work of Fauvet and Menous, Manchon introduced the first and second kinds of arborified multiple zeta values, along with two types of arborifications, which are Hopf algebra morphisms corresponding to the first and second kinds, respectively. In this talk, we introduce a linear map constructed by Manchon, which satisfies the compatibility condition between the arborifications but breaks the tree structure, and a linear map constructed by Clavier, which respects the tree structure but fails the condition. Based on Foissy's work, we extend the results of Manchon and Clavier to the setting of planar rooted trees and construct a linear map which modifies Clavier's map and satisfies the compatibility condition.

Various Lie algebras related to the motivic Galois Lie algebra

Hidekazu Furusho（古庄 英和）
Nagoya University（名古屋大学）
Email: furusho@math.nagoya-u.ac.jp

Abstract I report on recent progress concerning the motivic Galois Lie algebra, the double shuffle Lie algebra, the Kashiwara-Vergne Lie algebra, and related topics.

Cyclotomic conical zeta values and cyclotomic multiple zeta values

Li Guo（郭 锂）
Rutgers University-Newark（罗格斯大学纽瓦克分校）
Email: liguo@rutgers.edu

Abstract We establish double subdivision relations of regularized cyclotomic conical zeta values. We also prove that regularised cyclotomic conical zeta values span the same space as regularised cyclotomic multiple zeta values by means of subdivisions of cones. This is joint work with Sylvie Paycha, Bin Zhang and Zhiyao Zhang.

On the dimension of motivic cyclotomic multiple zeta values

Minoru Hirose（広瀬 稔）
Kagoshima University（鹿儿岛大学）
Email: mathhirose@gmail.com

Abstract Let N be a positive integer. A fundamental problem in the theory of mixed Tate motives is to determine whether the ring of periods of mixed Tate motives of level N is spanned by cyclotomic multiple zeta values of the same level. Deligne showed that the answer is affirmative for $N = 2, 3, 4, 8$, and Brown established the case $N = 1$. On the other hand, Goncharov proved that the answer is negative when N is a prime greater than or equal to 5. Recently, I proved that the answer is affirmative when N is a power of 2 or 3. In this talk, I will explain this result and discuss some related topics.

On the sums of polynomial units modulo n

Shaofang Hong（洪 绍方）
Sichuan University（四川大学）
Email: sfhong@scu.edu.cn

Abstract Let $f \in \mathbb{Z}[x]$ be a non-constant polynomial. Let n, k and c be integers such that $n \geq 1$ and $k \geq 2$. An integer a is called an f-unit in the ring $\mathbb{Z}_n$ of residue classes modulo n if $\gcd(f(a), n) = 1$. In this paper, we use the principle of cross-classification to derive an explicit formula for the number $\mathcal{N}_{k,f,c}(n)$ of solutions $(x_1, \ldots, x_k)$ of the congruence $x_1 + \cdots + x_k \equiv c \pmod{n}$ with all x_i being f-units in the ring $\mathbb{Z}_n$. It extends a result of Anand, Chattopadhyay and Roy. Furthermore, we arrive at more explicit formula for $\mathcal{N}_{k,f,c}(n)$ when $f(x)$ is linear or quadratic. This generalizes the formula of Brauer obtained in 1926 and that of Yang and Zhao gotten in 2017.

"True analogues" of depths 2 and 3 zeta values in the ring of finite multiple zeta values

Masanobu Kaneko（金子 昌信）
Kyushu University（九州大学）
Email: kaneko.masanobu.661@m.kyushu-u.ac.jp

Abstract We discuss elements in the ring of finite multiple zeta values that correspond to the real multiple zeta values of depth less than 4 under the conjectural correspondence between finite multiple zeta values and classical multiple zeta values modulo π^2.

Diophantine approximation of multiple zeta-star values

Jiangtao Li（李 江涛）
Central South University（中南大学）
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Abstract The set of multiple zeta-star values is a countable dense subset of the half line $(1, +\infty)$. In this paper, we establish some classical Diophantine type results for the set of multiple zeta-star values. Firstly, we give a criterion to determine whether a number is a multiple zeta-star value. Secondly, we establish the zero-one law for the set of multiple zeta-star value. Lastly, we propose a conjecture for the set of multiple zeta-star values, which strengthens the original zero-one law.

The Kaneko-Zagier conjecture for general integer indices

Masataka Ono（小野 雅隆）
Senshu University（専修大学）
Email: ono@isc.senshu-u.ac.jp

Abstract Kaneko and Zagier introduced two variants of multiple zeta values, which we call $\mathcal{A}$-MZVs and $\mathcal{S}$-MZVs, and conjectured the correspondence between them. While these values were originally defined for positive integer indices, Komori extended the definition of $\mathcal{S}$-MZVs to general integer indices. Since $\mathcal{A}$-MZVs can also be defined for general integers, Komori's work suggests a generalization of the Kaneko-Zagier conjecture. In this talk, we will explain how this generalization is reduced to the original conjecture. This talk is based on the joint work with Shuji Yamamoto.

Generalized duality formula for Schur MZVs

Yasuo Ohno（大野 泰生）
Tohoku University（东北大学）
Email: yasuo.ohno.d8@tohoku.ac.jp

Abstract In understanding the family of relations among multiple zeta values, the duality relations and their generalizations proposes important information. In this talk, after briefly reviewing the duality formula and its generalization for multiple zeta values, we discuss their recent extension to Schur multiple zeta values. This is a joint work with Maiki Nakasuji (Sophia Univ. / Tohoku Univ.).

Non-vanishing of Rankin-Selberg Special L-values

Zhi Qi（齐 治）
Zhejiang University（浙江大学）
Email: zhi.qi@zju.edu.cn

Abstract In this talk, I'll present my recent work on the effective non-vanishing of Rankin-Selberg L-functions at special points, motivated by the

Phillips-Sarnak theory of deformations of Maass forms and Luo's works on this non-vanishing problem.

Values at non-positive integers of twisted multiple zeta-functions

Simon Rutard
Nagoya University（名古屋大学）
Email: rutard.simon@gamil.com

Abstract In 2006, de Crisenoy gave explicit formulas for the values at non-positive integers of a class of fully twisted multiple zeta functions, where polynomials appear in the denominator. In this talk, we will consider a more general class of partially twisted zeta functions, where the twisting factors in the numerator do not depend on all the summation variables. In this case, we provide explicit formulas for the values at non-positive integers. We also observe that some of these values correspond to powers of π. This is joint work with D. Essouabri and K. Matsumoto.

t-adic symmetric multiple zeta values for indices in which 1 and 3 appear alternately

Shingo Saito（斎藤 新悟）
Kyushu University（九州大学）
Email: ssaito@artsci.kyushu-u.ac.jp

Abstract This talk is concerned with the t-adic symmetric multiple zeta values modulo t^m without modulo π^2 reduction for indices in which 1 and 3 appear alternately. We investigate those values that can be expressed as a polynomial of the Riemann zeta values, and give a conjecturally complete list of explicit formulas for such values. This is joint work with Minoru Hirose and Hideki Murahara.

Conical Zeta Values

Nobuo Sato（佐藤 信夫）
National Taiwan University（国立台湾大学）
Email: nbsato@ntu.edu.tw

Abstract Conical zeta values are a generalization of multiple zeta values associated with rational cones. Terasoma proved that conical zeta values can be expressed as linear combinations of cyclotomic multiple zeta values. Building on this, Dupont and Panzer proposed a conjecture relating the level of these cyclotomic multiple zeta values to the underlying cone. In this talk, I will present recent progress on their conjecture in the totally unimodular case. This is joint work with Minoru Hirose, Hideki Murahara, Tomokazu Onozuka, and Masataka Ono.

A zero-density estimate for GL(3) L-functions and its application

Qingfeng Sun（孙 庆峰）
Shandong University（山东大学）
Email: qfsun@sdu.edu.cn

Abstract The zero-distribution problem is an important topic in the theory of L-functions. In this talk, we will discuss some recent results on zero-density estimates for GL(3) L-functions and its application. This is a joint work with Hui Wang.

Duality Principle for Ramanujan-type and Zeilberger-type series

Zhi-Wei Sun（孙 智伟）
Nanjing University（南京大学）
Email: zwsun@nju.edu.cn

Abstract In this talk, we introduce the Duality Principle for irrational Ramanujan-type series and irrational Zeilberger-type series, which was recently proposed by the speaker. Inspired by this principle, we propose many new irrational series for $1/\pi$ as well as some fast converging series for computing certain special values of Dirichlet's L-function.

Shuffle product for multiple zeta functions

Takeshi Shinohara（篠原 健）
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Abstract It is well known that multiple zeta values (MZVs) satisfy a vast number of algebraic relations. In particular, the "stuffle" and "shuffle" relations are most fundamental and important relations because of the big conjecture, stating that all linear relations among MZVs can be derived from the (extended) double shuffle relations (= stuffle + shuffle, roughly speaking). From an analytic point of view, it is natural to ask whether such relations can be extended to functional equations for multiple zeta functions (MZFs).This type of question was first raised by professor Matsumoto around 2000. On the one hand, it is easy to show that the stuffle relation for MZVs can be extended to the functional relation. On the other hand, although there has been some progress on functional relations for MZFs other than the stuffle relations, the shuffle relations for MZFs have been less understood. In this talk, I will explain that the shuffle relations for MZVs can be extended to the functional relations for MZFs. This talk is based on the joint work with N. Komiyama (Osaka Univ.).

Recent developments of multiple Eisenstein series of level N

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Abstract In this talk, I will overview the study of multiple Eisenstein series for congruence subgroups of level N.

A proof of a conjecture of Zhao on weight 2 distribution relations of cyclotomic multiple zeta values

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Abstract In his 2010 paper, Zhao conjectured that for cyclotomic multiple zeta values of level $N > 1$, weight 2 distribution relations follow from

double shuffle relations combined with weight 1 and depth 2 distribution relations. To address this conjecture, we revisit two formal frameworks capturing the combinatorial structure of double shuffle relations. The first approach, developed by Racinet through the lens of the Drinfeld associator, characterizes double shuffle relations using Hopf algebra coproducts, formalized in the affine scheme DMR(N) and its subscheme DMRD(N) incorporating distribution relations. The second approach, studied by Hoffmann, Ihara-Kaneko-Zagier ($N = 1$), and Arakawa-Kaneko and Zhao ($N \geq 1$), interprets double shuffle relations via algebraic products, encoded in the affine scheme EDS(N). In this talk, we construct an isomorphism between DMR(N) and EDS(N), define a subscheme EDSD(N) of EDS(N) and identify it with DMRD(N), and use this identification to prove Zhao's conjecture. This talk is based on joint work with Henrik Bachmann.

Monodromy of Lauricella functions and higher dimensional generalizations

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Abstract The monodromy of hypergeometric functions determines many important properties of the functions. In many cases the monodromy groups preserve certain hermitian forms and give rise to unitary representations of the pure braid groups. In this talk, we discuss the monodromy of Lauricella functions, which is studied in Deligne-Mostow theory. We focus on the commensurability classifications of the monodromy groups and discuss higher dimensional integral interpretations of those functions, which includes the periods of $K3$ surfaces and special Calabi-Yau varieties. This is based on the joint work with Zhiwei Zheng.

Generalization of Schur multiple zeta values and related Hopf algebras

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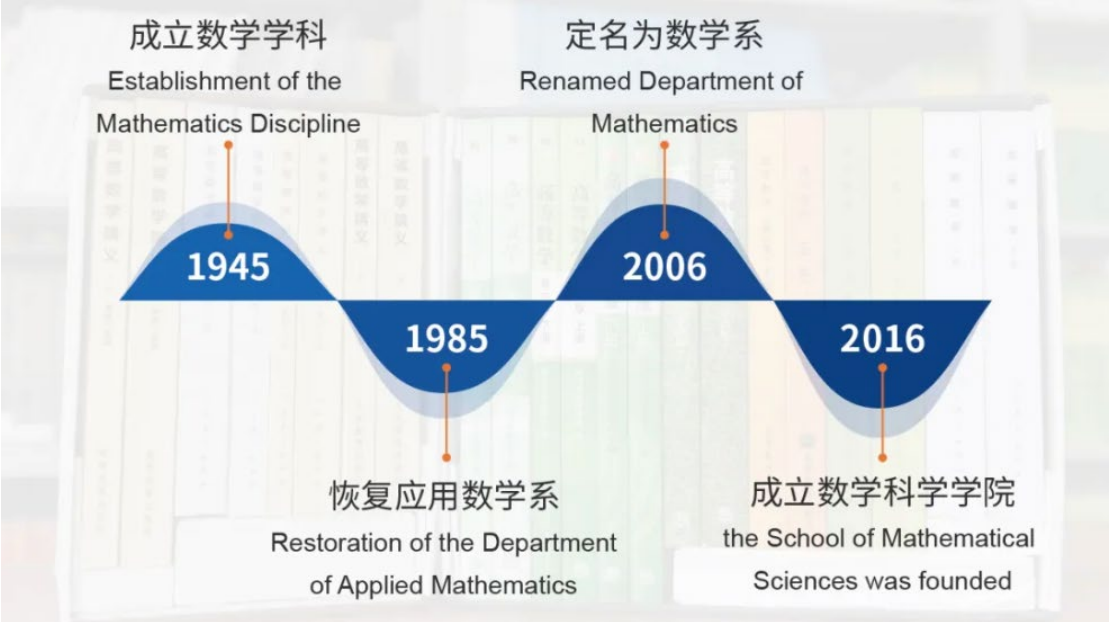
Abstract Nakasuji, Phuksuwan, and Yamasaki introduced Schur multiple zeta values (MZVs) to unify standard MZVs and multiple zeta-star values (MZSVs), and proved a series of determinantal formulas, such as the Jacobi-Trudi formula. In this talk, we will define a Hopf algebra structure on Young tableaux and relate it to the quasi-shuffle Hopf algebra, which provides a natural context for interpreting the Jacobi-Trudi formula. We will then connect this algebraic setup to Schur multiple Eisenstein series (SMES), discussing their Fourier expansions and presenting related modularity results.

同济大学数学科学学院简介

一、学院历史



同济大学数学学科始建于 1945 年，杨武之、周炜良、樊映川等众多知名学者曾在此任教。近年来，学院获批国家级及省部级高层次人才 20 余人。

The Mathematics Discipline of Tongji University was established in 1945, and many renowned scholars such as Wuzhi Yang, Weiliang Zhou and Yingchuan Fan worked here. In recent years, the School of Mathematical Sciences has been approved with more than 20 high-level talents at the national and provincial levels.

二、学科发展成就

教育部重点实验室 **Key Laboratory of the Ministry of Education**	2023 年获批"智能计算与应用"教育部重点实验室 Key Laboratory of Intelligent Computing and Application, Ministry of Education in 2023
教育部学科评估 A 类学科 **Class-A Discipline in the Discipline Evaluation, Ministry of Education**	教育部学科评估 A 类学科 Mathematics discipline of Tongji University was graded A (for top 2%-5%) in the discipline evaluation by the Ministry of Education
上海市前沿科学研究基地 **Frontier Science Research Base, Shanghai**	2021 年获批上海市智能计算前沿科学研究基地 Approved as Frontier Science Research Base of Intelligent Computing, Shanghai in 2021
国家级一流本科专业建设点 **National First-Class**	"数学与应用数学"和"统计学"专业获评国家级一流本科专业建设点

Undergraduate Major Construction Points	"Mathematics and Applied Mathematics" and "Statistics" majors were awarded "National First-Class Undergraduate Major Construction Points
教育部"强基计划" Pilot Reform Program of Enrollment for Basic Subjects, Ministry of Education	2019 年入选教育部"强基计划" Selected for "Pilot Reform Program of Enrollment for Basic Subjects", Ministry of Education in 2019
教育部基础学科拔尖学生培养计划 2.0 National Basic Disciplines Elite Talent Development Program 2.0, Ministry of Education	2020 年入选教学部基础学科拔尖学生培养计划 2.0 基地 Selected as a base for "National Basic Disciplines Elite Talent Development Program 2.0", Ministry of Education in 2020
国家级一流本科课程 National First-class Undergraduate Courses	2019-2020 年，《高等数学》《线性代数》等 5 门课程 获批国家级一流本科课程 Five courses including Advanced Mathematics and Linear Algebra were approved as "National First-class Undergraduate Courses" from 2019 to 2020
全国优秀教材特等奖 Grand Prize for National Excellent Teaching Materials	2021 年同济版《高等数学（第七版）》荣获首届"全国优秀教材特等奖" The 7th edition of Advanced Mathematics compiled by Tongji University won the "Grand Prize for National Excellent Teaching Materials" in 2021
国家级教学成果奖 National Teaching Achievement Award	1997 年获评国家级教学成果奖一等奖，2001、2005、2023 年三次获评国家级教学成果奖二等奖 Won the "First Prize of National Teaching Achievement Award" in 1997 and the "Second Prize of National Teaching Achievement Award" in 2001, 2005, and 2023
国家首批虚拟教研室建设试点 The First Batch of National Pilot Program for the Construction of Virtual Teaching and Research Laboratories	2022 年"同济大学高等数学课程虚拟教研室"入选国家首批虚拟教研室建设试点名单 Virtual Teaching and Research Center for Advanced Mathematics Courses at Tongji University was selected as one of the first batch of National Pilot Program for the Construction of Virtual Teaching and Research Laboratories in 2022

三、学科建设

数学与应用数学、统计学两个本科专业
Two undergraduate majors in Mathematics and Applied Mathematics and Statistics

数学一级学科硕士点和博士点
Master's and doctoral programs in mathematics at the first level discipline

应用统计专业硕士学位点
Master's Degree Program in Applied Statistics

数学博士后流动站
Postdoctoral Mobile Station in Mathematics

三个以中青年学者为骨干、与国内外数学界交流密切的高水平学术团队

Three high-level academic teams, with middle-aged and young scholars as the backbone,closely communication with the domestic and international mathematical community

四、人才培养

学院以造就一流数学人才为己任，大力培养具有扎实数学基础、引领学科发展的学术领军人才，以及在人工智能、金融工程等相关学科领域开展应用实践的卓越科技人才。学院既重视对学生理论与实践相结合能力的培养，也重视学生科研创新能力的培养。

With the mission of creating first-class mathematical talents, the School of Mathematical Sciences vigorously cultivates academic leaders with solid mathematical foundation who lead the development of the discipline, and outstanding scientific and technological talents who carry out application practice in artificial intelligence, financial engineering and other related disciplines. We attach great importance to the cultivation of students' ability to combine theory with practice, as well as the cultivation of their research and innovation abilities.

培养面向国家重大战略需求的未来高端领军人才

To cultivate future high-end leading talents who meet the needs of major national strategies

培养具有原创精神与国际视野的世界级顶尖数学家

To cultivate world-class top leading mathematicians with original spirit and international vision

培养一流研究型人才和一流应用型人才

To cultivate first-class research-oriented talents and first-class application-oriented talents

近三年就业率达 98%，本科生深造率近 70%，主要前往：清华、北大、中科院、复旦、交大、同济等高校深造，本科生出国境比例约占 15%，主要前往牛津、耶鲁、哥大、杜克、加州大学、新加坡国立等国外高校深造。近三年，本研毕业生就业集中于互联网、金融、教师、公务员等职位，有多位毕业生返回家乡做选调生为祖国建设添砖加瓦。

In the past three years, the employment rate has reached 98%, and nearly 70% of undergraduates have pursued further education, mainly to Tsinghua University, Peking University, Chinese Academy of Sciences, Fudan University, Shanghai Jiaotong University, Tongji University and other universities. About 15% of undergraduates have gone abroad in the past three years, mainly going to foreign universities such as Oxford, Yale, Columbia University, Duke, University of California, and National University of Singapore for further studies. In the past three years, the employment of undergraduates and graduates has been concentrated in the Internet, finance, teachers, civil servants and other positions, and a number of graduates have returned to their hometowns to work as Selected Graduates to contribute to the construction of our country.

五、国际交流

- 与法国巴黎高科国立统计与经济管理学校、法国国立统计与信息分析学校签署互派优秀硕士生的双学位协议
- 与美国威斯康辛-麦迪逊分校建立本科生交流项目以及统计专业理学硕士项目
- 与台湾东吴大学签署面向本科生的交换学生协议
- 举办"牛津大学学术研习营"，每年组织学生开展短期国际交流学习

- Signed double-degree agreements with Paris Graduate School of Economics, Statistics and Finance (ENSAE) and National School for Statistics and Information Analysis (ENSAI) for the reciprocal sending of outstanding master's degree candidates
- Established an undergraduate exchange program and a Master of Science program in Statistics with University of Wisconsin-Madison (UW-Madison)
- Signed student exchange agreements with Soochow University (SCU) in Taiwan for undergraduate students
- Host the "Oxford University Academic Training Camp" and organize short-term international exchange studies for students every year

学生赴牛津大学开展“牛津学术研习营”国际交流活动

Students from School of Mathematical Sciences went to Oxford University to participate in the "Oxford University Academic Training Camp" International Exchange Activities