酒　　霖

数学助理教授
昆山杜克大学
江苏省苏州市昆山市杜克大道8号
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学术岗位经历

2023.08– 昆山杜克大学助理教授

2020.08–2023.07 昆山杜克大学讲师
杜克大学实践助理教授(Assistant Professor of the Practics, Duke University)

2017.09–2020.07 博士后 加拿大戴尔豪斯大学数学与统计系 导师: *Karl Dilcher*
(Department of Mathematics and Statistics, Dalhousie University)

2017.03–2017.08 博士后 奥地利科学院约翰拉东计算与应用数学研究所 导师: *Christoph Koutschan*
(Johann Radon Institute for Computational and Applied Mathematics, Austrian Academy of Sciences)

2016.06–2017.02 博士后奥地利约翰开普勒大学符号运算研究所导师: *Peter Paule & Carsten Schneider*
(Research Institute for Symbolic Computation, Johannes Kepler University)

教育经历

2011.08–2016.05 美国杜兰大学(Tulane University)数学博士 导师: *Victor Hugo Moll*

2013.09–2014.02 奥地利约翰开普勒大学符号运算研究所
博士交换生 导师: *Carsten Schneider*

2008.09–2010.07 北京理工大学 理学硕士 数学专业 导师: 孙华飞

2004.09–2008.06 北京理工大学 理学学士 数学专业 毕业论文指导教师: 孙华飞

研究方向

伯努利与欧拉多项式，符号积分，特殊函数，解析数论，组合数学

科研经费

2023.07–2025.06 武大-昆杜中外联合科研平台种子基金 昆山杜克主要负责人 武汉大学—昆山杜克大学
项目名称:"武汉大学-昆山杜克大学-戴尔豪斯大学组合与数论平台"

2022.07–2024.06 武大-昆杜中外联合科研平台种子基金 W武汉大学—昆山杜克大学
参与昆山杜克大学邹冬勉博士团队

2022.01–2022.12 Gradescope Research Project Grant Gradescope
与昆山杜克大学教学中心协作

2021.07–2023.06 昆山杜克交叉学科种子基金 昆山杜克大学
与昆山杜克大学Myung-Joong Huang博士共同承担

2017.09–2019.08 Killam Research Fund 戴尔豪斯大学

学术论文

(1) S. Chern, **L. Jiu**, and I. Simonelli, A central limit theorem for a card shuffling problem, 审稿中.

(2) **L. Jiu** and D. Y. H. Shi, On b-ary binomial coefficients with negative entries, 审稿中.

(3) **L. Jiu** and S. Chern, Hankel determinants and Jacobi continued fractions for q-Euler numbers, 已接收 *C. R. Math. Acad. Sci. Paris*.

(4) **L. Jiu** and Y. Li, Hankel determinants of certain sequences of Bernoulli polynomials: A direct proof of an inverse matrix entry from Statistics, 已接收 *Contrib. Discrete Math.*

(5) K. Dilcher and **L. Jiu**, Hankel determinants of shifted sequences of Bernoulli and Euler numbers, 已接收 *Contrib. Discrete Math.*

(6) Z. Bradshaw, I. Gonzalez, **L. Jiu**, V. H. Moll, and C. Vignat, Compatibility of the method of brackets with classical integration rules, *Open Math.* **21** (2023), Article number: 20220581.

(7) **L. Jiu** and D. Y. H. Shi, Moments and cumulants on identities for Bernoulli and Euler numbers, *Math. Reports* **24** (2022), 643–650.
(8) **L. Jiu** I. Simonelli, and H. Yue, Loop Decompositions of Random Walks and Nontrivial Identities of Bernoulli and Euler Polynomials, *Integers*, **22** (2022), A91.
(9) K. Dilcher and **L. Jiu**, Hankel Determinants of sequences related to Bernoulli and Euler Polynomials, *Int. J. Number Theory* **18** (2022), 331–359.
(10) K. Dilcher and **L. Jiu**, Orthogonal polynomials and Hankel determinants for certain Bernoulli and Euler polynomials, *J. Math. Anal. Appl.* **497** (2021), Article 124855.
(11) I. Gonzales, **L. Jiu**, and V. H. Moll, An extension of the method of brackets. Part 2, *Open Math.* **18** (2020), 983–955.
(12) **L. Jiu** and C. Koutschan, Calculation and properties of zonal polynomials, *Math. Comput. Sci.* **14** (2020), 623–640.
(13) N. Takayama, **L. Jiu**, S. Kuriki, and Y. Zhang, Computations of the Expected Euler Characteristic for the Largest Eigenvalue of a Real Wishart Matrix, *J. Multivariate Anal.* **179** (2020), Article 104642.
(14) **L. Jiu**, C. Vignat, and T. Wakhare, Analytic Continuation for Multiple Zeta Values using Symbolic Representations, *Int. J. Number Theory* **16** (2020), 579–602.
(15) **L. Jiu** and C. Vignat, Connection coefficients for higher-order Bernoulli and Euler polynomials: a random walk approach, *Fibonacci Quart.* **57** (2019), 84–95.
(16) **L. Jiu** and D. Y. H. Shi, Matrix representation for multiplicative nested sums, *Colloq. Math.* **158** (2019), 183–194.
(17) **L. Jiu** and D. Y. H. Shi, Orthogonal polynomials and connection to generalized Motzkin numbers for higher-order Euler polynomials, *J. Number Theory* **199** (2019), 389–402.
(18) I. Gonzalez, K. Kohl, **L. Jiu**, and V. H. Moll, The method of brackets in experimental mathematics, *Frontiers of Orthogonal Polynomials and q-Series*, Z. Nashed and X. Li eds., World Scientific Publishers, 2018.
(19) **L. Jiu**, V. H. Moll, and C. Vignat, A symbolic approach to multiple zeta values at the negative integers, *J. Symbolic Comput.* **84** (2018), 1–13.
(20) I. Gonzales, K. Kohl, **L. Jiu**, and V. H. Moll, An extension of the method of brackets. Part 1, *Open Math.* **15** (2017), 1181–1211.
(21) **L. Jiu**, Integral representations of equally positive integer-indexed harmonic sums at infinity, *Research in Number Theory* **3** (2017), Article 3:10.
(22) C. Li, E. Zhang, **L. Jiu**, and H. Sun, Optimal control on special Euclidean group via natural gradient descent algorithm, *Sci. China Inf. Sci.* **59** (2016), Article: 112203.
(23) I. Gonzalez, **L. Jiu**, and V. H. Moll, Pochhammer symbol with negative indices. A new rule for the method of brackets, *Open Math.* **14** (2016), 681–686.
(24) T. Amdeberhan, A. Dixit, X. Guan, **L. Jiu**, A. Kuznetsov, V. H. Moll, and C. Vignat, The integrals in Gradshteyn and Ryzhik. Part 30: trigonometric functions, *Scientia Series A: Mathematical Sciences* **27** (2016), 47–74.
(25) T. Amdeberhan, A. Dixit, X. Guan, **L. Jiu**, V. H. Moll, and C. Vignat, A series involving Catalan numbers. Proofs and demonstrations, *Elem. Math.* **71** (2016), 109–121.
(26) **L. Jiu** and C. Vignat, On binomial identities in arbitrary bases, *J. Integer Seq.* **19** (2016), Article 16.5.5.
(27) **L. Jiu**, V. H. Moll, and C. Vignat, A symbolic approach to some identities for Bernoulli-Barnes polynomials, *Int. J. Number Theory* **12** (2016), 649–662.
(28) A. Dixit, **L. Jiu**, V. H. Moll, and C. Vignat, The finite Fourier transform of classical polynomials, *J. Aust. Math. Soc.* **98** (2015), 145–160.
(29) T. Amdeberhan, A. Dixit, X. Guan, **L. Jiu** and V. H. Moll, The unimodality of a polynomial coming from a rational integral. Back to the original proof, *J. Math. Anal. Appl.* **420** (2014), 1154–1166.
(30) A. Byrnes, **L. Jiu**, V. H. Moll, and C. Vignat, Recursion rules for the hypergeometric zeta functions, *Int. J. Number Theory* **10** (2014), 1761–1782.
(31) **L. Jiu**, V. H. Moll, and C. Vignat, Identities for generalized Euler polynomials, Integral Transforms *Spec. Funct.* **25** (2014), 777–789.

(32) Z. Zhang, H. Sun, **L. Jiu**, and L. Peng, A natural gradient algorithm for stochastic distribution systems, *Entropy* **16** (2014), 4338–4352.
(33) F. Zhang, H. Sun, **L. Jiu**, and L. Peng, The arc length variational formula on the exponential manifold, *Math. Slovaca* **63** (2013), 1101–1112.
(34) L. Peng, H. Sun, and **L. Jiu**, The geometric structure of the Pareto distribution, *Bol. Asoc. Mat. Venez.* **14** (2007), 5–13.
(35) **L. Jiu** and H. Sun, On minimal homothetical hypersurfaces, *Colloq. Math.* 109 (2007), 239–249.
(36) X. Wang and **L. Jiu**, Characterizing hypersurfaces of generalized rotation through its normal lines, *Journal of Ningde Normal University (Natural Science)* **02** (2006), 117–119.

学术报告

(1) **Random Walk Models for Identities Involving Bernoulli and Euler Polynomials**
邀请报告
2023年3月6日, 加拿大, 哈利法克斯, 戴尔豪斯大学, 数学与统计系.
(2) **Random Walk Model on Finite Number of Sites**
邀请报告
2022年10月19日, 在线, 安徽大学，数学学院.
(3) **Bernoulli Symbol and Multiple Zeta Function at Non-negative Integers**
第一届多重 zeta 值及相关领域国际研讨会
2022年8月8日至9日, 在线, 主办单位：安徽师范大学，同济大学，浙江理工大学，中南大学.
(4) **Hankel Determinants of Certain Sequences of Bernoulli and Euler Polynomials**
邀请报告
2022年6月13日, 在线, 浙江理工大学，数学科学系.
(5) **Bernoulli and Euler Symbols: Umbral Calculus, Random Variables, and Multiple Zeta Values**
昆山杜克大学—上海交通大学数学与数据科学联合研讨会
2022年01月05日, 上海市, 上海交通大学.
(6) **Random Walk Models for Non-trivial Identities Involving Bernoulli and Euler Polynomials of Higher-orders**
2021年苏州地区数学青年会议
2021年09月25日至26日, 江苏省苏州市, 苏州大学。
(7) **Random Walks and Identities Involving Bernoulli and Euler Polynomials of Higher-order**
邀请报告
2021年6月18日, 北京, 人民大学，统计与大数据研究院.
(8) **Examples on Computer Proofs**
邀请报告
2021年5月28日, 湖北省武汉市, 武汉大学.
(9) **Hankel Determinant of Sequences Related to Bernoulli and Euler Polynomials**
昆山杜克大学—武汉大学数学与统计学院 学术交流会
2021年5月28日, 湖北省武汉市, 武汉大学.
(10) **Hankel Determinant on Sequences Related to Bernoulli and Euler Polynomials**
2020年苏州地区数学青年会议
2020年11月14日至15日, 江苏省苏州市昆山市, 昆山杜克大学
(11) **Three Examples on Computer Proofs**
昆山杜克大学祖冲之数学与计算科学中心
2020年11月6日, 江苏省苏州市昆山市, 昆山杜克大学.
(12) **Orthogonal Polynomials for Higher-order Euler Polynomials**
15th International Symposium on Orthogonal Polynomials, Special Functions and Applications
2019年7月22日至26日, 奥地利哈根贝格, 符号运算研究所.
(13) **On Harmonic Sums: Integral and Matrix Representations with Connections to Partition-theoretic Generalization of the Riemann Zeta-function and Random Walks**
Analytic and Combinatorial Number Theory: The Legacy of Ramanujan (A conference in honor of

Bruce C. Berndt's 80th birthday)
2019年6月6日至6月9日, 美国伊利诺伊州, 伊利诺伊大学厄巴纳–香槟分校.

(14) **Random Walk Approaches to Identities on Higher-order Bernoulli and Euler Polynomials**
American Mathematical Society Spring Southeastern Sectional Meeting
2019年3月15日至3月17日, 美国阿拉巴马州奥本市, 奥本大学.

(15) **Matrix Representation for Higher-Order Euler Polynomials**
2019 Joint Mathematics Meetings
2019年1月16日至1月19日, 美国马里兰州巴尔的摩市.

(16) **Bernoulli Symbol and Sum of Powers**
6th International Congress on Mathematical Software
2018年7月24日至7月28日, 美国印第安纳州圣母市, 圣母大学.

(17) **Random Walks and Identities for High-order Bernoulli and Euler Polynomials**
18th International Conference on Fibonacci Numbers and Their Applications
2018年7月1日至7月8日, 加拿大新斯科舍省哈利法克斯, 戴尔豪斯大学.

(18) **Matrix Representations for Bernoulli and Euler Polynomials**
2018 Canadian Mathematical Society Summer Meeting
2018年6月1日至6月4日, 加拿大新不伦瑞克省弗雷瑞克登, 新不伦瑞克大学.

(19) **The Probabilistic and Combinatorial Interpretations of the Bernoulli Symbol**
2017 Canadian Mathematical Society Winter Meeting
2017年12月8日至12月11日, 加拿大安大略省滑铁卢, 滑铁卢大学.

(20) **Bernoulli Symbol on Multiple Zeta Values at Negative Integers**
23rd Conference on Applications of Computer Algebra (Commemorating the heritage of Jonathan Michael Borwein)
2017年7月17日至7月21日, 以色列耶路撒冷, 耶路撒冷技术学院.

(21) **On Bernoulli Symbol $\mathcal{B}$**
Klagenfurt-Linz-Wien Workshop
2017年5月3日至5月6日, 奥地利赖弗尼茨.

(22) **The Method of Brackets (MoB) and Integrating by Differentiating (IbD) Method**
Laboratoire des Signaux et Systemès, Universitè Paris Sud XI
2016年12月9日, 法国奥尔赛, 巴黎十一大学.

(23) **"Random Walks" for Harmonic Sums**
SFB Statusseminar
2016年11月27日至11月30日, 奥地利施特罗布尔.

(24) **On Binomial Identities in Arbitrary Bases**
北京理工大学复杂信息数学表征分析与应用实验室
2016年7月26日, 北京.

(25) **Random Walk: A Probabilistic and Geometric Approach to Number Theory**
International Conference on Mathematical Characterization, Analysis and Applications of Complex Information
2017年7月19日至7月20日, 北京, 北京理工大学.

(26) **The Method of Brackets**
5th International Congress on Mathematical Software
2017年7月11日至7月14日, 德国柏林, 祖斯研究院.

(27) **On Bernoulli Symbol $\mathcal{B}$ and Its Applications**
南开大学组合数学中心
2015年7月8日, 天津.

(28) **Recursion Rules for the Hypergeometric Zeta Functions**
Midwest Number Theory Conference for Graduate Students and Recent PhDs, X
2014年6月3日至6月4日, 美国伊利诺伊州, 伊利诺伊大学厄巴纳–香槟分校.

(29) **Implementation of an Algorithm on Converting Sums into Nested Sums**
Laboratoire des Signaux et Systemes, Universitè Paris Sud XI
2014年1月8日, 法国奥尔赛, 巴黎十一大学.

所获荣誉与奖励

2013–2014	数学科研奖 (Excellence in Mathematics)
2012–2013	优秀教学奖 (Excellent Graduate Student Teacher)
2008	北京理工大学优秀毕业生
2007	国家奖学金
2006	中国航天科技集团公司CASC二等奖学金

教学经历

昆山杜克大学		
2023 秋季	MATH 105	Calculus
	MATH 202	Linear Algebra
	MATH 105	Calculus
	MATH 301	Advanced Introduction to Probability
2023 春季	MATH 205	Probability and Statistics
	MINITERM 102	Experimental Mathematics and Symbolic Computation
2022 秋季	INDSTU 391	Introduction to Algebraic Geometry
	MATH 105	Calculus
	MATH 306	Number Theory
	MATH 301	Advanced Introduction to Probability
2022 春季	INDSTU 391	Variational Quantum Algorithms
	MATH 201	Multivariable Calculus
	MATH 301	Advanced Introduction to Probability
	MATH 201	Multivariable Calculus
2021 秋季	MATH 105	Calculus
	INDSTU 391	Riemann Zeta-Function
	INDSTU 391	Quantum Algorithm
	MATH 306	Number Theory
	INDSTU 391	Combinatorics
2021 春季	MATH 205	Probability and Statistics
	MATH 301	Advanced Introduction to Probability
2020 秋季	MATH 105	Calculus
	MATH 201	Multivariable Calculus
加拿大戴尔豪斯大学		
2019 暑期	MATH 1030	Matrix Theory and Linear Algebra I
2019 春季	MATH 3080	Introduction to Complex Variables
美国杜兰大学		
2016 春季	MATH 1060	Long Calculus II
2015 秋季	MATH 1310	Consolidated Calculus
2015 春季	MATH 1210	Long Calculus I
2014 暑期	MATH 1160	Long Calculus II

其他技能

语言： 英语(流畅，可教学、报告)

计算机： Mathematica, SageMath, Python, Maple, LaTeX, LyX

程序包: Zonal.sage `https://jiulin90.github.io/Packages/Zonal.sage`

BNE.sage `https://jiulin90.github.io/Packages/BNE.sage`