

Lin JIU

Killiam Postdoctoral Fellow

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RESEARCH INTERESTS

Symbolic Computation, Special Function, Number Theory, Combinatorics, Information Geometry

EDUCATION

- **Tulane University**
May 2016: [Ph. D. in Mathematics](#) Advisor: [Victor Hugo Moll](#)
 - **2014-2015** Tea Master & 2015-2016 Tea Doctor (for organizing departmental Tea Time)
 - **2013-2014** Excellence in Mathematics (Math Dept., Tulane Univ.)
 - **2012-2013** Excellent Graduate Student Teacher (Math Dept., Tulane Univ.)
- **Research Institute for Symbolic Computation, Johannes Kepler University Linz**
Sept. 2013–Feb. 2014: Exchange Ph.D Student Advisor: [Carsten Schneider](#)
- **Beijing Institute of Technology (B. I. T.)**
July 2010: [M. S., Mathematics](#) Advisor: [Huafei Sun](#)
June 2008: [B. S., Mathematics](#)
 - **2008** Outstanding Graduates (Beijing Institute of Technology)
 - **2007** National Scholarship (Department of Education, P. R. China)
 - **2006** China Aerospace Science and Technology Corporation (CASC) Scholarship, Second Class (China Aerospace Science and Technology Corporation)

ACADEMIC EMPLOYMENT

- **September 2017–August 2019(Expected)**
[Killam Postdoctoral Fellowship](#),
Department of Mathematics and Statistics, Dalhousie University, Halifax, Canada
Mentor: [Karl Dilcher](#)
- **March 2017–September 2017**
[Postdoctoral Research Scientist](#), Symbolic Computation Group, Austrian Science Fund (FWF) grant P29467-N32
[Johann Radon Institute for Computational and Applied Mathematics](#), Austrian Academy of Sciences, Linz, Austria
Mentor: [Christoph Koutschan](#)
- **June 2016–February 2017**
[Post-Doc Fellow](#), Austrian Science Fund (FWF) grant, SFB F50 (F5006-N15 and F5009-N15) projects
[Research Institute for Symbolic Computation, Johannes Kepler University Linz, Linz, Austria](#)
Mentors: [Peter Paule](#) & [Carsten Schneider](#)

PUBLICATIONS

24. **L. Jiu** and D. Y. Shi, Probabilistic and combinatorial interpretations for Bernoulli and Euler polynomials, Submitted for Publication.
23. **L. Jiu** and D. Y. Shi, Matrix representation for multiplicative nested sums, Submitted for Publication.
22. Y. Li, B. Li, H. Sun, and **L. Jiu**, Application of entropy in Riemannian manifolds, Submitted for Publication.
21. Y. Li, B. Li, H. Sun, and **L. Jiu**, Matrix geometric means and uncertainty relation, Submitted for Publication.
20. D. Li, H. Sun, C. Tao, and **L. Jiu**, Principal bundles and holonomy groups on statistical manifolds, Submitted for Publication.

19. 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.
18. **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.
17. 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.
16. **L. Jiu**, Integral representations of equally positive integer-indexed harmonic sums at infinity, *Research in Number Theory* **3** (2017), Article 10.
15. 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.
14. 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.
13. 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.
12. 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.
11. **L. Jiu** and C. Vignat, On binomial identities in arbitrary bases, *J. Integer Seq.* **19** (2016), Article 16.5.5.
10. **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.
9. 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.
8. 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.
7. 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.
6. **L. Jiu**, V. H. Moll, and C. Vignat, Identities for generalized Euler polynomials, *Integral Transforms Spec. Funct.* **25** (2014), 777–789.
5. Z. Zhang, H. Sun, **L. Jiu**, and L. Peng, A natural gradient algorithm for stochastic distribution systems, *Entropy* **16** (2014), 4338–4352.
4. F. Zhang, H. Sun, **L. Jiu**, and L. Peng, The arc length variational formula on the exponential manifold, *Math. Slovaca* **63** (2013), 1101–1112.
3. L. Peng, H. Sun, and **L. Jiu**, The geometric structure of the Pareto distribution, *Bol. Asoc. Mat. Venez.* **14** (2007), 5–13.
2. **L. Jiu** and H. Sun, On minimal homothetical hypersurfaces, *Colloq. Math.* **109** (2007), 239–249.
1. 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.

INVITED TALKS

12. **Matrix Representations for Bernoulli and Euler Polynomials**
2018 Canadian Mathematical Society Summer Meeting, Fredericton, NB, Canada, June 1–4, 2018.
11. **The Probabilistic and Combinatorial Interpretations of the Bernoulli Symbol**
2017 Canadian Mathematical Society Winter Meeting, Waterloo, ON, Canada, Dec. 8–11, 2017.
10. **Bernoulli Symbol on Multiple Zeta Values at Negative Integers**
23rd Conference on Applications of Computer Algebra (Commemorating the heritage of Jonathan Michael Borwein), Jerusalem, Israel, July 17–21, 2017.
9. **On Bernoulli Symbol \mathcal{B}**
Klagenfurt-Linz-Wien Workshop, Riefnitz, Austria, May 3–6, 2017.
8. **The Method of Brackets (MoB) and Integrating by Differentiating (IbD) Method**
Laboratoire des Signaux et Systemes, Université Paris Sud XI, Orsay, France, Dec. 9, 2016.
7. **“Random Walks” for Harmonic Sums**
SFB Statusseminar, Strobl, Austria, Nov. 27–30, 2016.
6. **On Binomial Identities in Arbitrary Bases**
Beijing Key Laboratory on Mathematical Characterization, Analysis and Applications of Complex Information, Beijing Institute of Technology, Beijing, China, July 26, 2016.
5. **Random Walk: A Probabilistic and Geometric Approach to Number Theory**
International Conference on Mathematical Characterization, Analysis and Applications of Complex Information, Beijing Institute of Technology, Beijing, China, July 19–20, 2016.

4. The Method of Brackets

The 5th International Congress on Mathematical Software (ICMS), The Zuse Institute Berlin (ZIB), Berlin, Germany, July 11–14, 2016.

3. On Bernoulli Symbol \mathcal{B} and Its Applications

Center for Combinatorics, Nankai University, Tianjin, China, July 8, 2015.

2. Recursion Rules for the Hypergeometric Zeta Functions

Midwest Number Theory Conference for Graduate Students and Recent PhDs, X, University of Illinois at Urbana-Champaign, Urbana, IL, U. S. A., June 3–4, 2014.

1. Implementation of an Algorithm on Converting Sums into Nested Sums

Laboratoire des Signaux et Systemes, Université Paris Sud XI, Orsay, France, Jan. 8, 2014.

TEACHING EXPERIENCE

• Instructor

Tulane University:

Spring	2016	Long Calculus II
Fall	2015	Consolidated Calculus
Spring	2015	Long Calculus I
Summer	2014	Long Calculus II

• Teaching Assistant

Tulane University:

Fall	2014	Real Analysis I
Spring	2014	Combinatorics
Spring	2013	Real Analysis I, Calculus II
Fall	2012	Calculus III, Experimental Mathematics
Spring	2012	Real Analysis I
Fall	2011	Calculus I

Beijing Institute of Technology: (For Special Joint Class with University of Central Lancashire, U. K., completely in English)

Spring	2011	Calculus for Engineering II
Fall	2010	Calculus for Engineering I
Spring	2010	Calculus for Engineering II
Fall	2009	Calculus for Engineering I

RELEVANT SKILLS

- **Language:** Mandarin (native), English (fluent)
- **Computer:** Sage, Maple, Mathematica, L_X , $\text{L}_\text{A}\text{T}_\text{E}_\text{X}$

REFERENCES

- **Victor Hugo Moll**, `vhm@tulane.edu`
Prof., Dr., Department of Mathematics, Tulane University.
- **Karl Dilcher**, `dilcher@mathstat.dal.ca`
Prof., Dr., Department of Mathematics and Statistics, Dalhousie University.
- **Peter Paule**, `Peter.Paule@risc.jku.at`
Univ.-Prof., Dr., Director of Research Institute for Symbolic Computation, Johannes Kepler University Linz
- **Carsten Schneider**, `Carsten.Schneider@risc.jku.at`
Priv.-Doz. Dipl.-Inf. Dr., Research Institute for Symbolic Computation, Johannes Kepler University Linz
- **Christoph Koutschan**, `Christoph.koutschan@ricam.oeaw.ac.at`
Dr., Research Institute for Symbolic Computation, Johannes Kepler University Linz
Research Scientist, Johann Radon Institute for Computational and Applied Mathematics, Austrian Academy of Sciences
- **Christophe Vignat**, `Christophe.VIGNAT@lss.supelec.fr`
Prof., Dr., Laboratoire des Signaux et Systemes, Université Paris Sud XI.
- **Huafei Sun**, `huafeisun@bit.edu.cn`
Prof., Dr., Department of Mathematics, Beijing Institute of Technology.
Director, Beijing Key Laboratory on Mathematical Characterization, Analysis and Applications of Complex Information.