个人简历

基本信息

姓名	张熠
性别	男
国籍	中国
出生年月	1988年12月12日
现工作单位\职称	得克萨斯大学达拉斯分校\博士后
联系地址	800 West Campbell Road, Richardson, TX 75080-3021
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教育背景（自本科起）

09/2013 – 02/2017	理学博士 (优秀毕业生), 数学, 代数研究所, 约翰·开普勒林茨大学, 林茨, 奥地利 导师: Manuel Kauers 教授与 李子明 研究员
09/2011 – 07/2016	理学博士, 应用数学, 数学机械化重点实验室, 中国科学院数学与系统科学研究院, 中国科学院大学, 北京, 中国 导师: Manuel Kauers 教授与 李子明 研究员
09/2007 – 07/2011	理学学士, 数学与应用数学 (师范), 数学科学学院, 苏州大学, 苏州, 中国

科研/工作背景

09/2018 – 至今	博士后, 数学系, 得克萨斯大学达拉斯分校 (UTD), 美国 合作导师: Carlos E. Arreche 教授
03/2017 – 08/2018	博士后, Johann Radon Institute for Computational and Applied Mathematics (RICAM), 奥地利科学院, 奥地利 合作导师: Christoph Koutschan 教授

主要研究背景

符号计算, 计算机代数, 计算代数几何, 算法组合学，微分及差分方程的代数理论

代表性论文（*通讯作者）

1. Thieu N. Vo and Yi Zhang. *Rational Solutions of High-Order Algebraic Ordinary Difference Equations*, 2019, in preparation.
2. Carlos Arreche and Yi Zhang. *Computation of the unipotent radical of the differential Galois group for a parameterized linear differential equation*, 2019, in preparation.
3. Zhimin Sun, Xiangyong Zeng and Yi Zhang. *The relation between the maximum order omplexity and expansion complexity of finite length sequences*, 2019, in preparation.
4. Maximilian Jaroschek and Yi Zhang. *Desingularization in General Shift Algebras*, 2019, in preparation.
5. Lin Jiu, Satoshi Kuriki, Nobuki Takayama and Yi Zhang. *Euler Characteristic Method for the Largest Eigenvalue of a Random Matrix*, 2019, in preparation.
6. Thieu N. Vo and Yi Zhang. *Rational Solutions of First-Order Algebraic Ordinary Difference Equations*, 2019, arXiv:1901.11048, submitted.
7. N. Thieu Vo and Yi Zhang (*通讯作者). *Rational Solutions of High-Order Algebraic Ordinary Differential Equations*, 2018, arXiv:1709.04174, accepted by Journal of Systems Science and Complexity (SCI).
8. Ting Guo, Christian Krattenthaler and Yi Zhang (*通讯作者). *On (shape-)Wilf-equivalence for words*, 2018. *Advances in Applied Mathematics*, 100, pp. 87-100, 2018. DOI:10.1016/j.aam.2018.05.006, arXiv:1802.09856. (SCI)
9. Christoph Koutschan and Yi Zhang (*通讯作者). *Desingularization in the q-Weyl Algebra*. *Advances in Applied Mathematics*, 97, pp. 80–101, 2018. DOI:10.1016/j.aam.2018.02.005, arXiv:1801.04160. (SCI)
10. Shaoshi Chen, Manuel Kauers, Ziming Li and Yi Zhang (*通讯作者). *Apparent Singularities of D-finite Systems*, 2017. arXiv:1705.00838, accepted by Journal of Symbolic Computation (SCI).
11. Yi Zhang (*通讯作者). *Contraction of Ore Ideals with Applications*. In *Proceedings of the 2016 International Symposium on Symbolic and Algebraic Computation*, pp. 413-420, ACM Press, 2016. DOI:10.1145/2930889.2930890. （ISSAC为计算机科学“Algorithms and Theory”领域的国际顶级会议，NUS评价为Rank 1，AUS评价为A+）(EI, 该文获得ISSAC2016杰出学生论文奖)

获奖情况

07/2016	ACM SIGSAM颁发的ISSAC2016杰出学生论文奖
09/2009 – 07/2010	苏州大学人民综合二等奖学金
09/2008 – 07/2009	苏州大学人民综合一等奖学金
09/2007 – 07/2008	苏州大学人民综合一等奖学金
09/2007 – 07/2008	苏州大学朱敬文奖学金
09/2007 – 07/2008	苏州大学校三好学生

学术任职

- 《Mathematical Reviews》评论员

教学背景

2019春季 教师(Instructor), 线性代数
得克萨斯大学达拉斯分校

访问背景

05/2017 访问学者, 数学系, 神户大学 (Kobe University), 日本.
合作导师: Nobuki Takayama (高山信毅) 教授

博士论文

- Yi Zhang. *Univarite Contraction and Multivariate Desingularization of Ore Ideals*. PhD thesis, Institute for Algebra, Johannes Kepler University Linz, 2017. arXiv:1710.07445

研究注记 (Research Notes)

- N. Thieu Vo, Sebastian Falkensteiner and Yi Zhang. *Formal Power Series Solutions of Algebraic Ordinary Differential Equations*, 2018, arXiv:1803.09646.
- Yi Zhang. *Testing q-shift Equivalence of Polynomials*, July, 2017.
- Yi Zhang. *Integer Vectors of a Fundamental Parallelepiped*, 2016.
- Ziming Li and Yi Zhang. *A Note on Gröbner Bases of Ore Polynomials over a PID*, 2016. https://yzhang1616.github.io/GB.pdf

软件包

- ansatz.m, a Mathematica package for computing the expansion complexity of a given finite length sequences. It is based on joint work with Zhimin Sun and Xiangyong Zeng.
- TestNonvanishing.nb, a Mathematica notebook for checking the nonvanishing property of algebraic ordinary differential equations in Kamke's collection. It is based on joint work with Sebastian Falkensteiner and N. Thieu Vo. The notebook requires the availability of the Mathematica package Kamke_ODE.m.
- zof.m, a Mathematica package for generating 0-1-fillings of a Ferrers board (shape), checking the number of sigma-avoiding 0-1-fillings of a Ferrers board, generating generalized 0-1-fillings of a Ferrers board, and checking the number of generalized 0-1-fillings of a Ferrers board with weight n such that the longest ne-chain has length

u and the longest se-chain has length v. It is based on joint work with Ting Guo and Christian Krattenthaler. For a demonstration of the package, see the zof.nb notebook.

- Example1_HGM.nb, a Mathematica notebook for the demonstration of the holonomic gradient method for the evaluation of expection of an Euler characteristic number. It is based on joint work with Satoshi Kuriki and Nobuki Takayama. The notebook requires the availability of Koutschan's package HolonomicFunctions.m.

- KamkeODEs.mw, a Maple worksheet for checking the (completely) maximal comparability and noncriticality of algebraic ordinary differential equations in Kample's collection. It is based on joint work with Dr. Thieu Vo Ngoc. The worksheet requires the availability of the Maple package KamkeODEs.mpl.

- qDesingularization.m, a Mathematica package for computing desingularized operators and the q-Weyl closure of a given q-difference operator in the first q-Weyl algebra. It is based on joint work with Dr. Christoph Koutschan. The package requires the availability of Koutschan's package HolonomicFunctions.m and Kauer's pacakge Singular.m. For a description of the usage of the package, see the Example.nb notebook.

学术报告

1. *Desingularization in the q-Weyl algebra.* Invited talk at Key Laboratory of Mathematics Mechanization, Academy of Mathematics and Systems Sciences, Chinese Academy of Sciences, Beijing, China, July, 2018.

2. *Desingularization in the q-Weyl algebra.* Contributed talk at at ACA'18 (the 24th Conference on Applications of Computer Algebra), the Faculty of Mathematics, the University of Santiago de Compostela, Santiago, Spain, June, 2018.

3. *Laurent Series Solutions of Algebraic Ordinary Differential Equations.* Invited talk at Computer Algebra Seminar, Research Institute for Symbolic Computation (RISC), Johannes Kepler University Linz, Austria, November, 2017.

4. *Apparent Singularities of D-finite Systems.* Contributed talk at ACA'17 (the 23rd Conference on Applications of Computer Algebra), Jerusalem College of Technology, Jerusalem, Israel, July, 2017.

5. *Contraction of Linear Difference and Differential Operators.* Contributed talk at ISSAC'16 (the 41st International Symposium on Symbolic and Algebraic Computation), Wilfrid Laurier University, Waterloo, Canada, July, 2016.

6. *Contraction of Linear Difference and Differential Operators.* Invited talk at the seminar of Center for Combinatorics, Nankai University, Tianjin, China, June, 2016.

7. *An Algorithm for Contraction of an Ore Ideal.* Invited talk at the seminar of Institute of Discrete Mathematics and Geometry, Vienna University of Technology, Vienna, Austria, October, 2015.

8. *The Restriction Problem for D-finite Functions.* Contributed talk at the Workshop on Computational and Algebraic Methods in Statistics, The University of Tokyo, Tokyo, Japan, March, 2015.

9. *An Algorithm for Decomposing Multivariate Hypergeometric Terms.* Contributed talk at CM'13 (the 5th National Conference of Computer Mathematics), Jilin University, Changchun, China, August, 2013.

学术期刊评审工作

对于以下的学术期刊及会议论文，括号内给出了相应的评审次数。

- Conferences on Applications of Computer Algebra (1)
- Journal of Systems Science and Complexity (1)
- Journal of Computational and Applied Mathematics (1)
- Advances in Applied Mathematics (1)
- International Symposiums on Symbolic and Algebraic Computation (2)
- Journal of Symbolic Computation (3)

其他技能

- 编程技能: C, Matlab, Maple, Mathematica, Macaulay2, Sage 以及 Python
- 口语: 中文 (母语), 英文 (流利), 德文 (基础)