Hui HUANG

Curriculum Vitae

School of Mathematical Sciences
Dalian University of Technology
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Personal Data

Birthplace Fuzhou, Fujian Province

Nationality People's Republic of China

Academic Employment

Aug. 2020 – present **Associate Professor**, *School of Mathematical Sciences, Dalian University of Technology, Dalian, China.*

Sept. 2017 – June 2020 **Postdoctoral Fellow**, *David R. Cheriton School of Computer Science, University of Waterloo, Waterloo, Canada.*
Working with Mark Giesbrecht, George Labahn and Eugene Zima

Mar. 2017 – Aug. 2017 **Postdoctoral Fellow**, *Institute for Algebra, Johannes Kepler University, Linz, Austria.*
Working with Manuel Kauers

Education Background

Sept. 2013 – Feb. 2017 **Doctorate studies in Applied Mathematics**, *FWF Doctoral Program "Computational Mathematics", Johannes Kepler University, Linz, Austria and Academy of Mathematics and Systems Science, University of Chinese Academy of Sciences, Beijing, China (Dual degrees).*
Supervisors: Manuel Kauers (JKU, Asutria) and Ziming Li (UCAS, China)

Feb. 2017 **PhD thesis**, *Definite Sums of Hypergeometric Terms and Limits of P-Recursive Sequences (Advisors: Manuel Kauers and Ziming Li).*

Sept. 2011 – Aug. 2013 **Master-Doctorate studies in Applied Mathematics**, *Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing, China.*
Supervisor: Ziming Li

Sept. 2007 – July 2011 **Bachelor studies in Mathematics and Applied Mathematics**, *Xiamen University*, Fujian, China.

Research Interests

My scientific interests are computer algebra, symbolic summation and integration, Ore algebras, symbolic asymptotics and the applications of all that in combinatorics and elsewhere.

Submitted Preprints

- Shaoshi Chen, Qing-Hu Hou, Hui Huang, George Labahn, Rong-Hua Wang. Constructing minimal telescopers for rational functions in three discrete variables. April 2019. arXiv:1904.11614.

Refereed Publications

[7] Mark Giesbrecht, Hui Huang, George Labahn, Eugene Zima. Efficient rational creative telescoping. Journal of Symbolic Computation, 109:57–87, 2022.

[6] Mark Giesbrecht, Hui Huang, George Labahn, Eugene Zima. Efficient q-integer linear decomposition of multivariate polynomials. Journal of Symbolic Computation, 107:122–144, 2021.

[5] Mark Giesbrecht, Hui Huang, George Labahn, Eugene Zima. Efficient integer-linear decomposition of multivariate polynomials. In *Proceedings of the 2019 International Symposium on Symbolic and Algebraic Computation*, pages 171–178, ACM, New York, 2019.

[4] Hui Huang, Manuel Kauers. D-finite numbers. International Journal of Number Theory, 14(7):1827–1848, 2018.

[3] Hao Du, Hui Huang, Ziming Li. A q-analogue of the modified Abramov-Petkovšek reduction, Advances in Computer Algebra, In Honour of Sergei Abramov's 70th Birthday, edited by C. Schneider, E. Zima, Springer Proceedings in Mathematics and Statistics 226, 105–129, 2018.

[2] Hui Huang. New bounds for hypergeometric creative telescoping. In *Proceedings of the 2016 International Symposium on Symbolic and Algebraic Computation*, pages 279–286. ACM, New York, 2016. (Distinguished Female Student Award.)

[1] Shaoshi Chen, Hui Huang, Manuel Kauers, Ziming Li. A modified Abramov-Petkovšek reduction and creative telescoping for hypergeometric terms. In *Proceedings of the 2015 International Symposium on Symbolic and Algebraic Computation*, pages 117–124. ACM, New York, 2015.

Other Publications

- Shaoshi Chen, Hui Huang, Ziming Li. Improved Abramov-Petkovšek's reduction and creative telescoping for hypergeometric terms (Poster at ISSAC'14). In *ACM Communications in Computer Algebra*, 48(3/4):106-108. ACM, New York, 2014. (Distinguished Poster Award.)

Selected Conference, Workshop and Colloquium Talks

Aug. 2021 **Efficient Rational Creative Telescoping**.
SIAM-AG21 (SIAM Conference on Applied Algebraic Geometry 2021), Virtual, Online.

July 2021 **Constructing Minimal Telescopers for Rational Functions in Three Discrete Variables**.
ACA'21 (26th International Conference on Applications of Computer Algebra), Virtual, Online.

June 2021 **Efficient Rational Creative Telescoping**.
CM'21 (Computer Mathematics 2021), Guilin University Of Electronic Technology, Guilin, China.

July 2019 **Efficient Rational Creative Telescoping**.
OPSFA'19 (15th International Symposium on Orthogonal Polynomials, Special Functions and Applications), Research Institute for Symbolic Computation, Hagenberg, Austria.

July 2019 **Efficient Integer-Linear Decomposition of Multivariate Polynomials**.
ISSAC'19 (44th International Symposium on Symbolic and Algebraic Computation), Beihang University, Beijing, China.

July 2017 **D-finite numbers**.
ACA'17 (23rd International Conference on Applications of Computer Algebra), Jerusalem College of Technology, Jerusalem, Israel.

July 2016 **New Bounds for Hypergeometric Creative Telescoping**.
ISSAC'16 (41st International Symposium on Symbolic and Algebraic Computation), Wilfrid Laurier University, Waterloo, Canada.

June 2016 **Reduction and Creative Telescoping for Hypergeometric Terms**.
Center for Combinatorics Seminar, Nankai University, Tianjin, China.

Nov. 2015 **Two Applications of the Modified Abramov-Petkovšek Reduction**.
CM'15 (Computer Mathematics 2015), University of Science and Technology of China, Hefei, China.

July 2015 **A Modified Abramov-Petkovšek Reduction and Creative Telescoping for Hypergeometric Terms**.
ISSAC'15 (40th International Symposium on Symbolic and Algebraic Computation), The University of Bath, Bath, United Kingdom.

June 2015 **Creative Telescoping via Abramov's Reduction**.
CanaDAM'15 (Canadian Discrete and Algorithmic Mathematics Conference), University of Saskatchewan, Saskatoon, Canada.

Aug. 2013 **An Improved Abramov-Petkovšek Reduction for Hypergeometric Terms**.
CM'13 (Computer Mathematics 2013), Jilin University, Changchun, China.

Academic Awards

July 2016 Distinguished Female Student Award at ISSAC 2016

July 2014 Distinguished Poster Award at ISSAC 2014 (together with S. Chen and Z. Li)