Zhenhua Wang

Curriculum Vitae

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Academic Positions

08/2023– Current   **Assistant Professor/Tenure-Track**, *Alabama A&M University*, Huntsville, Alabama.

06/2024– 08/2024   **Visiting Faculty**, *Oak Ridge National Laboratory*, Oak Ridge, Tennessee.

08/2022– 07/2023   **Limited Term Lecturer**, *The University of Georgia*, Athens, Georgia.

08/2019– 07/2022   **Limited Term Assistant Professor**, *The University of Georgia*, Athens, Georgia.

Education

09/2013– 05/2019   **Ph.D. in Mathematics**, *The University of Houston*, Houston, Texas.
Under supervision of David Blecher

09/2010– 06/2013   **M.S. in Mathematics**, *Jilin University*, Changchun, China.

09/2006– 07/2010   **B.S. in Mathematics and Applied Mathematics**, *Jilin University*, Changchun, China.

Research Interest

Functional Analysis, Jordan Operator Algebra, Operator Theory, Quantum Computing, and Quantum Information Theory.

Refereed Journal Publications

1. **Suzuki Type Estimates for Exponentiated Sums and Generalized Lie-Trotter Formulas in JB- algebras** (with S. Chehade and S. Wang), *Linear Algebra and its Applications*, **680** (2024) 156–169.
2. **Relative operator entropies and Tsallis relative operator entropies in JB-algebras** (with S. Wang), *Rocky Mountain Journal of Mathematics,* **52(3)** (2022) 1073–1087.
3. **Refined operator inequalities for relative operator entropies** (with S. Wang), *Analysis Mathematica,* **48**(1) (2022) 185–198.
4. **Operator means in JB-algebras** (with S. Wang), *Reports on Mathematical Physics,* **88** (2021) 383–398.
5. **Involutive operator algebras** (with D. P. Blecher), *Positivity,* **24** (2020) 13–53.
6. **Jordan operator algebras revisited** (with D. P. Blecher), *Math. Nachr.* **292** (2019), 2129–2136.
7. **Breathers of discrete one-dimensional nonlinear Schrödinger equations in inhomogeneous media** (with S. Ji), *Taiwanese J. Math.* **23** (2019), no. 3, 675–690.
8. **Jordan operator algebras: basic theory** (with D. P. Blecher), *Math. Nachr.* **291** (2018), 1629–1654.
9. **Roots in operator and Banach algebras** (with D. P. Blecher), *Integral Equations Operator Theory* **85** (2016), 63–90.

Submitted Journal Publications

10. **Suzuki Type Estimates for Exponentiated Sums and Generalized Lie-Trotter Formulas in Banach Algebras** Preprint (2023), `https://doi.org/10.48550/arXiv.2306.13791`.
11. **Lie-Trotter means in JB-algebras** Preprint (2023), `https://doi.org/10.48550/arXiv.2310.12857`.

Presentations and Talks

09/2024 **Generalized Trotter Product Formulas with Associated Error Estimations**, San Antonio, TX.
AMS Fall Central Sectional Meeting

03/2024 **Generalized Trotter Product Formulas and Enhanced Error Estimations**, *Oak Ridge National Laboratory*, Oak Ridge, TN.
Quantum Computational Science Group Seminar

11/2023 **Exploring Quantum Simulations: Generalized Lie-Trotter Formulas and Enhanced Error Estimations**, *Alabama A&M University*, Huntsville, AL.
Departmental Colloquium

10/2022 **Relative operator entropies in Jordan algebras**, *University of Houston*, Houston, TX.
Analysis Seminar

08/2022 **Jordan operator algebras and quantum information theory**, *Jilin University*, Changchun, China.
Workshop in Frontier Problems in Mathematics

04/2022 **Relative operator entropies in Jordan algebras**, *Minnesota State University at Mankato*, Mankato, MN.
Virtual Departmental Colloquium

01/2022 **Relative operator entropies in Jordan algebras**, *Sam Houston State University*, Huntsville, TX.
Departmental Colloquium

05/2021 **Relative operator entropies in Jordan operator algebras**, *Washington University in St. Louis*, St. Louis, MI.
Great Plains Operator Theory Symposium

7/2019 **Dimension theory and Jordan operator algebra**, *Texas A& M University*, College Station, TX.
Workshop in Analysis and Probability

5/2019 **Dimension theory**, *University of Houston*, Houston, TX.
Analysis Seminar

10/2018 **Noncommuative topology and operator ∗-algebra**, *Texas A&M University*, College Station, TX.
Noncommutative geometry seminar

10/2018 **Noncommuative topology and operator ∗-algebra**, *Baylor University*, Waco, TX.
The Texas Analysis and Mathematical Physics Symposium

07/2018 **Real positivity in Jordan operator algebras**, *East China Normal University*, Shanghai, China.
International Workshop on Operator Theory and its Applications

05/2018 **Introduction to operator ∗-algebras**, *Miami University*, Oxford, OH.
Great Plains Operator Theory Symposium

03/2018 **Introduction to Jordan operator algebras**, *Baylor University*, Waco, TX.
Brazos Analysis Seminar

10/2017 **Introduction to Jordan operator algebras**, *University of Houston*, Houston, TX.
Analysis Seminar

04/2017 **Jordan operator algebras with contractive approximate identities**, *University of Houston*, Houston, TX.
Graduate Students Paper Presentations

Journal Referee

- **Contemporary Mathematics**
- **Communications of the Korean Mathematical Society**
- **Extracta Mathematicae**
- **Filomat**
- **Houston Journal of Mathematics**
- **International Mathematics Research Notices**
- **Journal of Mathematical Analysis and Applications**
- **Journal of Mathematical Physics**
- **Khayyam Journal of Mathematics**

Teaching Experience

Alabama A&M University

8/23–now **Instructor for Calculus I, Calculus II and Calculus III**.
Carried full responsibility of teaching face to face Calculus I, Calculus II and Calculus III.

University of Georgia

8/19–7/23 **Instructor for Calculus I, Calculus III and Pre-Calculus**.
Carried full responsibility of teaching fully online Calculus I, face to face Calculus I, Calculus III and Pre-Calculus courses.

University of Houston

01/19–05/19 **Temporary Teaching Assistant for graduate level of functional analysis course**.
Taught some special topics in functional analysis class.

01/19–05/19 **Teaching Assistant for graduate level of real analysis**.
Took full responsibility of teaching graduate level of real analysis problem session.

08/17–12/18 **Instructor of Record for Calculus for Business and the Life Sciences**.
Carried full responsibility of teaching Calculus for Business and the Life Sciences.

09/13–05/17 **Teaching Assistant for Calculus I, II and III, Differential Equations, Linear Algebra, Complex Analysis, Probability, and Statistics**.
Held recitation sessions and provided one-on-one tutoring to students for the following entry-level to advanced math courses: Calculus I, II, III, Differential Equations, Linear Algebra, Complex Analysis, Probability, and Statistics.

Awards

2019-2022 Franklin College of Arts and Sciences at UGA Travel Grant

2019 Michael L. McLellan Scholarship

2013–2019 Doctoral Student Tuition Fellowship

2019 Travel Grant for International Workshop on Operator Theory and its Applications

2010–2013 Graduate Student Scholarship

2009 First Prize in Mathematical Contest in Modeling of Jilin University

2009 Outstanding Undergraduate Student Scholarship

2008 Outstanding Undergraduate Student Scholarship

Service

Alabama A&M University

2023– **Undergraduate advisor**.

2024– **Undergraduate research mentor**.

University of Georgia

10/2022 **Volunteer for UGA High School Math Tournament**.

2020–2022 **Undergraduate research mentor**.

2020–2021 **Organizer of functional analysis seminar** .

2019–2023 **Member of Mathematics Active Learning Team**.
Develop active learning techniques, Student Learning Outcomes, Assessment, Equity and Inclusion, Course mapping, etc.

University of Houston

2017–2019 **Treasurer of UH SIAM Graduate Student Chapter**, http://www.math.uh.edu/uhsiam/.
Monitor budget. Keep a record of all transactions. Construct industrial and academic seminars to students.

2015–2018 **President of Chinese Christian Fellowship at UH**.
Preside over meetings of the organization. Develop and organize events.

Languages

Mandarin **Mother tongue**

English **Fluent with high proficiency**

References

David Blecher **Professor**, *University of Houston*.
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+1 (713)-743-3451

Shuzhou Wang **Associate Professor**, *University of Georgia*.
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+1 (706)-542-0884

Yinshu Wu **Associate Professor**, *Alabama A&M University*.
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Enka Lakuriqi **Senior Lecturer**, *University of Georgia*.
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