

Birth: Jan 1984

Employment

- 2014 -present: Professor Tsinghua University.
- 2012 -2014: Assistant Professor Boston University.
- 2011 -2012: Boas Assistant Professor (Postdoctoral Fellowship) Northwestern University.
- **Visiting positions**
- 2019 -2020: Visiting fellow Institute for Advanced Study.
- 2014 -2015: Visiting fellow Perimeter Institute for Theoretical Physics.
- 2014 -2020: Affiliated Visiting Senior Scientist Kavli IPMU at University of Tokyo.
- **Service positions**
- 2020-2022, Associate Dean Qiuzhen College, Tsinghua University.
- 2019-2020, Associate Dean BIMSA, Yanqi Lake Beijing.
- 2017-2020, Associate Dean Dept. of Math. Sci., Tsinghua University.

Education

- Ph.D. in Mathematics, 2006-2011 Harvard University.
- M.Phil. in Mathematics, 2003-2005 Univ. of Sci. & Tech. of China.
- B.Sc. in Mathematics, 1999–2003 Univ. of Sci. & Tech. of China.

Academic Interest

- Mathematical Physics; Quantum Field Theory. Some previous works include the construction of the **quantum B-twisted open-closed string field theory** and **twisted supergravity**, solution of the **Landau-Ginzburg Mirror Symmetry Conjecture** on the quantum singularity theories, solution of the **higher genus mirror symmetry conjecture on elliptic curves**, etc.

Awards

- National Key Research and Development Program of China 2020YFA0713000 (PI), 2021-2025.
- NSF Beijing Key Project, Z180003 (co-PI) 2018.12-2021.12, Geometry and Category on Calabi-Yau manifolds
- NSF DMS-1309118 (PI) 2013-2016, Geometric Aspects of Quantum Field Theory and Topological String.
- **Morningside Medal of Mathematics: Gold Medal Award**, 2016.
- New World Mathematics Awards: Golden Prize for Doctor Thesis Awards, 2012
- Plenary Speaker at **String-Math** in 2015 (China), in 2018 (Japan) and in 2021 (Brazil)

Books

- «*Classical Mechanics and Geometry*» International Press of Boston. 2023. ISBN 9781571464545
- «*Electromagnetism and Geometry*» International Press of Boston. 2023. ISBN 9781571464620
- «*Ordinary Differential Equations*» International Press of Boston. 2024. ISBN 9781571464330
- «*Quantum Mechanics and Geometry*» available online at <https://sili-math.github.io/>
- «*Introduction to Algebraic Topology*» available online at <https://sili-math.github.io/>
- «*Geometry and Symmetry*» available online at <https://sili-math.github.io/>

Publications

1. *Quantum Algebra of Chern-Simons Matrix Model and Large N Limit* (with S.Hu, D. Ye, Y. Zhou), **Annales Henri Poincaré**, (2025)
2. *Stochastic Calculus and Hochschild Homology* (with Z.C. Wang and P. Yang), **arXiv:2501.12360 [math.PR]**
3. *Topological Quantum Mechanics on Orbifolds and Orbifold Index* (with P. Yang), **PAMQ**, 21 No.4 (2025)
4. *Quadratic Duality for Chiral Algebras* (with Z. Gui, K. Zeng), **Adv. Math.** 451 (2024) 109791
5. *On the Hilbert Space of the Chern-Simons Matrix Model, Deformed Double Current Algebra Action, and the Conformal Limit* (with S.Hu, D. Ye, Y. Zhou), **arXiv:2409.12486 [math-ph]**
6. *Vertex algebras and quantum master equation.* **J.Diff.Geom.** 123 (2023), no 3, 461-521.
7. *Regularized Integrals on Elliptic Curves and Holomorphic Anomaly Equations (with J. Zhou).* **Commun. Math. Phys.** 401, pages 613-645 (2023)
8. *On the L^2 -Hodge theory of Landau-Ginzburg models (with H. Wen).* **Adv. Math.** 396 (2022) 108165
9. *Landau-Ginzburg mirror symmetry conjecture* (with W. He, Y. Shen, R. Webb). **J. Eur. Math. Soc.** Volume 24, Issue 8, (2022), pp. 2915-2978
10. *Elliptic Trace Map on Chiral Algebras* (with Z. Gui), **arXiv:2112.14572 [math.QA]**
11. *Regularized Integrals on Riemann Surfaces and Modular Forms* (with J. Zhou). **Commun. Math. Phys.** 388, pages 1403-1474 (2021)
12. *Geometry of Localized Effective Theories, Exact Semi-classical Approximation and the Algebraic Index* (with Z.Gui, K.Xu). **Commun. Math. Phys.** 382, 441-483 (2021).
13. *Anomaly cancellation in the topological string* (with K. Costello). **Adv. Theo. Math. Phys.** Vol. 24, No. 7 (2020), pp. 1723-1771.
14. *Dispersionless Integrable Hierarchy via Kodaira-Spencer Gravity* (with W.He, X.Tang, P. Yoo). **Commun. Math. Phys.** 379, 327-352 (2020).
15. *Homotopy Algebras in Higher Spin Theory* (with K. Zeng). **Adv. Theo. Math. Phys.** Vol 24, Issue 3, 757-819 (2020)
16. *G-twisted braces and orbifold Landau-Ginzburg Models* (with W. He and Y. Li), **Commun. Math. Phys.** 373, no.1, 175-217 (2020).
17. *Calabi-Yau geometry, Primitive form and Mirror symmetry*, **Adv. Stud. Pure Math.** Primitive Forms and Related Subjects, page 237-268 (2019). Mathematical Society of Japan.
18. *Categorical primitive forms and Gromov-Witten invariants of An singularities* (with A. Caldararu and J. Tu). **Int Math Res Notices**, rnz315 (2019).
19. *Seiberg-Witten differential via primitive forms* (with D. Xie and S.-T. Yau), **Commun. Math. Phys** 367, no.1, 193-214 (2019).
20. *Effective Batalin-Vilkovisky quantization and geometric applications*, Proceedings of the 7th ICCM, Vol. I, 349-372, **Adv. Lect. Math.** 43. (2019).
21. *Unfolding of Orbifold LG B-Models: A Case Study* (with W. He and Y. Li), **PAMQ** 14.3 (2018): 443-465.
22. *Some Classical/Quantum Aspects of Calabi-Yau Moduli.* **Trends in Mathematics**, Birkhäuser, Cham. B-Model Gromov-Witten Theory, page 463-497 (2018).
23. *Mirror symmetry for unimodular exceptional singularities* (with C. Li, K. Saito and Y. Shen), **J. Eur. Math. Soc.** 19 (2017), no.4, 1189-1229.

24. *Batalin-Vilkovisky quantization and the algebraic index*(with Q.Li, R. Grady), **Adv. Math.** 317 (2017), 575-639.
25. *Twisted supergravity and its quantization* (with K. Costello), **arXiv: 1606.00365** [hep-th]
26. *On the B-twisted topological sigma model and Calabi-Yau geometry* (with Q. Li), **J.Diff.Geom.** 102 (2016) no.3, 409-484.
27. *Quantization of open-closed BCOV theory, I* (with K. Costello), **arXiv:1505.06703** [hep-th]
28. *A mirror theorem between Landau-Ginzburg models.* **Nuclear Phys. B.**, **898** (2015).
29. *Primitive forms via polyvector fields* (with C. Li and K. Saito), **arXiv:1311.1659** [math.AG]
30. *Variation of Hodge structures, Frobenius manifolds, and gauge theory*, **arXiv:1303.2782** [math.QA]
31. *Quantum BCOV theory on Calabi-Yau manifolds and the higher genus B-model* (with K. Costello), **arXiv:1201.4501** [math.QA]
32. *Renormalization and mirror symmetry*, **SIGMA** **8** (2012), 101
33. *Feynman graph integrals and almost modular forms*, **Commun. Number theory Phys**, **6**, (2012)
34. *Picard-Fuchs Equations of Relative Periods and Abel-Jacobi Map for Calabi-Yau Hypersurfaces* (with B.H. Lian and S.T. Yau), **Amer. J. Math**, **134** (2012), no.5, 1345-1384
35. *On the spectrum of unitary finite-Euclidean graphs* (with L.A. Vinh), **Ars Combin.** **110** (2013), 275-287.
36. *BCOV theory on the elliptic curve and higher genus mirror symmetry*, **arXiv:1112.4063** [math.QA]
37. *Morphisms from Azumaya prestable curves with a fundamental module to a projective variety: Topological D-strings as a master object for curves* (with C.H. Liu, R. Song and S.T. Yau), **arXiv:0809.2121** [math.AG]
38. *Hamiltonian Formalism of the de-Sitter Invariant Special Relativity* (with M.L. Yan, N.C. Xiao and W. Huang), **Commun. Theor. Phys.** **48** :27-36, (2007)
39. *Baryonium with a phenomenological skyrmion-type potential* (with M.L. Yan, B. Wu and B.Q. Ma), **Phys. Rev. D**, **72** (2005) 0 34027
40. *Calabi-Yau geometry and higher genus mirror symmetry*, PhD Thesis (2011), Harvard University.

Invited Talks

1. Mar 24, 2025: Fundamental Physics Seminar, IAS of HKUST, Hong Kong
2. Mar 20-Apr 3, 2025: MIST lecture series “B-model”, IMS of CUHK, Hong Kong
3. Feb 19, 2025: Seminar “Quantum Mechanics with zero Hamiltonian”, University of Mons, Belgium
4. Feb 3-6, 2025: Mini-Course “Homological Method in Topological/Holomorphic QFT”, Institut Mittag-Leffler
5. Jan 23, 2025: Conference “Cohomological Aspects of Quantum Field Theories”, Institut Mittag-Leffler
6. Nov 26, 2024: 省身班学术讲座，南开大学
7. Nov 5, 2024: The 4th International Conference on Operad Theory and Related Topics, Chern Institute of Mathematics, Nankai University
8. Oct 18, 2024: Workshop on Calabi-Yau Geometry, 上海科技大学
9. Oct 18, 2024: 科学进展与学术交流报告会，中科院数学与系统科学研究院
10. Sep 9-12, 2024: Gauge invariance: quantization and geometry – in memory of **Igor Batalin**, Belgium
11. July 21-31, 2024: Moscow International Undergraduate Mathematics Summer School, Moscow, Russia
12. July 11, 2024: ICBS Satellite Conference in Mathematical Physics, Shanghai, China

13. June 10-14, 2024: 2024 Thematic Program in Field Theory and Topology, Notre Dame, USA
14. May 17, 2024: Colloquium, 浙江大学数学科学学院.
15. May 16, 2024: 陈建功大讲堂, 杭州师范大学数学学院.
16. May 14, 2024: 数智论坛, 南昌大学数学与计算机学院.
17. May 13, 2024: 数觚讲坛, 南昌航空大学数学与信息科学学院.
18. May 10, 2024: 珠峰讲坛, 山东大学数学学院.
19. Apr 25, 2024: 学术讲座, 华中科技大学数学与统计学院.
20. Apr 24, 2024: 学术讲座, 华中科技大学物理学院.
21. Apr 23, 2024: 学术讲座, 湖北大学物理学院.
22. Apr 22, 2024: 学术论坛, 河南大学数学与统计学院.
23. Apr 3, 2024: Current Developments in Mathematics and Physics, Beijing, China.
24. Mar 12, 2024: Conference on "Algebraic, analytic, geometric structures emerging from quantum field theory", Chengdu, China.
25. Feb 28, 2024: 几何讨论班, 四川大学数学系.
26. Feb 1, 2024: Geometry and Physics Seminar, UC Berkeley, USA.
27. Jan 24, 2024: Geometry and Physics Seminar, Boston University, USA.
28. Jan 18, 2024: Algebraic Geometry Seminar, Boston College, USA.
29. Dec 23, 2023: 学术讲座, 东北师范大学.
30. Dec 23, 2023: 物理名家讲座, 吉林大学物理系.
31. Dec 11, 2023: 励新卓越论坛, 首都师范大学数学科学学院.
32. Dec 4, 2023: 代数几何讨论班, 南京大学.
33. Dec 3, 2023: 学术论坛, 南京大学.
34. Dec 3, 2023: 学术讲座, 东南大学丘成桐中心.
35. Sep 13, 2023: Eastern Hemisphere Colloquium on Geometry and Physics.
36. Aug 17, 2023: QM Research Seminar, Center for Quantum Mathematics, Danmark.
37. July 31, 2023: MIST: Satellite Conference to the "International Congress of Basic Science", CUHK, Hong Kong.
38. May 11, 2023: 2023 GADEPs focused conference II: Periods of Calabi-Yau varieties and Gromov-Witten invariants, BIMSA, China.
39. Apr 27, 2023: Wu Wen-tsun Lab Lecture, USTC, China.
40. Jan 13, 2023: TSIMF 2023 Homological Algebra of the Infrared, Sanya, China.
41. Nov 2, 2022: The Greater Bay Area Geometry and Mathematical Physics Seminar
42. Aug 1, 2022: The 9th International Congress of Chinese Mathematicians, Beijing, China.
43. June 20-24, 2022: Online Workshop on Topology and QFT. University of Notre dame.
44. Mar 30, 2022: Joint Harvard-CUHK-YMSC Differential Geometry Seminar.
45. Mar 22-25, 2022: "Geometry, Representation Theory and Quantum Fields", Osaka City University.
46. Nov 22-Dec 03 2021: String and M-Theory: The New Geometry of the 21st Century -II, NUS, Singapore.
47. Nov 22-26, 2021: Higher structures in geometry and physics, Chern Institute of Mathematics, Nankai University

48. **August 2-7, 2021: International Congress on Mathematical Physics (ICMP) 2021 (session Quantum Field Theory)**, Geneva, Switzerland.
49. **June 14-18, 2021: String-Math 2021 (Plenary talk)**, IMPA, Rio de Janeiro, Brazil.
50. May 14, 2021: TQFT Seminar, Instituto Superior Técnico, Lisbon, Portugal.
51. May 12, 2021: Hodge Seminar, Edinburgh Hodge Institute, Scotland.
52. May 3, 2021: Online Geometry and Physics Seminar, IASM at Zhejiang University, China.
53. Dec 27, 2020: ICCM Annual Meeting, USTC, China.
54. Oct 30, 2020: Wu Wen-tsün Lab Lecture, USTC, China.
55. Sep 20, 2020: “The 3rd Conference on Operad Theory and Related Topics”, Jilin University, China.
56. Apr 17, 2020: Zoom Mathematical Physics Seminar, Tsinghua University, China.
57. Dec 11, 2019: Colloquium, Columbia University, USA.
58. Dec 9, 2019: Symplectic Geometry, NCG and Math Physics, Washington Univ. in St. Louis, USA.
59. Dec 2, 2019: Geometry, Symmetry and Physics Seminar, Yale, USA.
60. Nov 25, 2019: Geometry and Topology Seminar, UC Irvine, USA.
61. Nov 21, 2019: Geometry, Physics and Representation Theory Seminar, Northeastern, USA.
62. Nov 15, 2019: High Energy Theory Seminar Seminar, IAS, USA.
63. Nov 8, 2019: Lie Group/Quantum Mathematics Seminar, Rutgers, USA.
64. Oct 8, 2019: Colloquium, Rutgers- Newark, USA.
65. June 17-28, 2019: Lectures at summer workshop “QFT for Mathematicians”, Perimeter Institute, Canada.
66. June 14, 2019: “The mathematical foundations of conformal field theory and related topics” in honor of Yi-Zhi Huang’s 60th birthday., Nankai University, Tianjin, China.
67. **June 13, 2019: The 8th International Congress of Chinese Mathematicians (Plenary talk), Beijing, China.**
68. May 6-11, 2019: Deformation theory and homotopy algebras, Emei, China.
69. Apr 24 and Apr 26, 2019: Mathematical Physics Seminar and GAP Seminar, USTC, China.
70. Feb 17-24, 2019: BIRS Workshop on Quantum Field Theory and Factorization Algebras, Banff, Canada.
71. January 25-27, 2019: Workshop on Modular structures in Gromov-Witten theory and related topics, University of Michigan, USA.
72. Feb 14, 2019: Geometry Seminar, University of Oregon, USA.
73. **Jan 14-18, 2019: Between Topology and Quantum Field Theory in celebration of Dan Freed’s 60th birthday, University of Texas at Austin, USA.**
74. Dec 10-14, 2018: Workshop on String and M-theory: the new geometry of the 21 century, IMS at NUS, Singapore.
75. Nov 24-26, 2018: Mini-Workshop on Hochschild Cohomology and Related Topics III, East China Normal University, China.
76. Nov 16, 2018: Colloquium at IMS, ShanghaiTech University, China.
77. **July 18-22, 2018: String-Math 2018 (Plenary talk), Tohoku University, Japan.**
78. May 10, 2018: 2018 Higher Structures and Symplectic Geometry, Tsinghua University, China.
79. Feb 8, 2018: Workshop on Factorisation Homology, Factorisation Algebras and the Cobordism Hypothesis, Saint-Etienne de Tinee, France.

80. Jan 29, 2018: Higher differential geometry seminar, MPIM, Bonn, Germany.
81. Jan 10-13, 2018: Simons Collaboration Workshop on Homological Mirror Symmetry, Harvard, USA.
82. Dec 7, 2017: Geometry Seminar, CNU, Beijing.
83. Nov 16-19, 2017: Gromov-Witten invariants and integrable hierarchies, USTC, China.
84. Nov 26, 2017: Wu Wen-tsün Lab Lecture, USTC, China.
85. Oct 30-Nov 4, 2017: East Asia Symplectic Conference 2017, Chengdu, China.
86. July 31-Aug 11, 2017: Geoquant 2017, Aarhus, Danmark.
87. **July 24-29, 2017: String-Math 2017 (Parallel talk), Hamburg, Germany.**
88. July 20-22, 2017: Flat connections in physics and geometry, Heidelberg, Germany.
89. July 3-7, 2017: Symposium in Geometry and Differential Equations, Beijing, China.
90. June 8, 2017: ICTS seminar, USTC, Hefei, China.
91. May 22-26, 2017: Homological mirror symmetry and higher genus invariants, Simons Center for Geometry and Physics, USA.
92. May 8-12, 2017: Quantum fields on manifolds with boundary and the BV formalism, Perimeter Institute, Canada.
93. **Apr 28-May 1, 2017: JDG conference on geometry and topology, Harvard, USA.**
94. **Apr 25-28, 2017: Developments of mathematics at IPMU: in honor of Kyoji Saito, Kavli IPMU, Japan.**
95. Apr 17-24, 2017: Gauge Equations, Geometry and Strings, ICMAT, Madrid, Spain.
96. Mar 13-17, 2017: Workshop on homological mirror symmetry, IAS, Princeton, USA.
97. Feb 6, 2017: Geometry and Physics seminar, IBS-CGP, Korea.
98. Jan 19, 2017: Ganita seminar, University of Toronto, Canada.
99. Jan 18, 2017: Mathematical Physics seminar, Perimeter Institute for theoretical physics, Canada.
100. Oct 31-Nov 4, 2016: BICMR/IBS-CGP joint Symplectic Geometry Workshop, Jeju, Korea.
101. **Aug 6-11, 2016: The 7th International Congress of Chinese Mathematicians, Beijing, China.**
102. **Aug 1-5, 2016: Strings 2016 (Parallel talk), Beijing, China.**
103. June 20-26, 2016: Retrospective Workshop for the Thematic Program on Calabi-Yau Varieties: Arithmetic, Geometry and Physics, Herstmonceux Castle, UK
104. May 8-14, 2016: Lecture series for “Factorization Algebras and Functorial Field Theories”, MFO, Germany.
105. May 6-8, 2016: Simons Workshop on SYZ Mirror Symmetry and related topics, Harvard, USA.
106. Apr 24-30, 2016: Mini course on “BV quantization and geometric applications”, IBS-CGP, Korea.
107. Apr 5-12, 2016: MIST IV: Mathematics Inspired by String Theory, CUHK, Hong Kong.
108. Jan 1-4, 2016: Poisson Geometry and Mathematical Physics, Chern Institute of Mathematics, Tianjin.
109. **Dec 31, 2015: Strings-Math 2015 (Plenary talk), Sanya, China.**
110. Dec 27, 2015: Workshop on Mathematics Physics, Dec 27, Sanya, China.
111. Nov 24, 2015: 2015 Annual Conference of Chinese Mathematical Society, CNU, Beijing.
112. Nov 14, 2015: Geometry and Physics seminar, Shanghai Jiaotong University, Shanghai
113. July 13-July 18, 2015: “Uniformization, Riemann-Hilbert Correspondence, Calabi-Yau manifold, and Picard-Fuchs Equation”, Mittag-Leffler Institute, Sweden

114. July 6-10, 2015: GAP XII-Derived Algebraic Geometry, IBS-CGP, Pohang, Korea
115. March 28, 2015: Tianyuan workshop in algebraic geometry, AMSS, Beijing.
116. Mar 23, 2015: Symplectic geometry and mathematical physics, BICMR, China.
117. March 7, 2015: Beijing Geometry and Physics Colloquium, Peking University
118. Feb 7-8, 2015: Lecture series-Introduction to perturbative field theory, Morningside Center, CAS, Beijing.
119. Jan 20, 2015: String/Math Seminar, Perimeter Institute, Canada
120. Aug 26, 2014: China annual complex analysis conference, USTC, Hefei.
121. Oct 20, 2014: Geometry seminar, Lehigh University, USA.
122. Oct 6, 2014: Informal mathematical physics seminar, Columbia University, USA.
123. Sep 29-Aug 3, 2014: Homological methods in quantum field theory, Simons center for geometry and physics, USA.
124. Sep 18, 2014: Seminar on mathematical physics, Morningside Center for Mathematics, CAS, Beijing.
125. **Aug 5, 2014: 60 years of Calabi conjecture-Workshop in Honor of Professor Shing-Tung Yau on the occasion of his 65th birthday, Tsinghua University**
126. June 8-15, 2014: Lecturer for Research Training Group 1670, University of Hamburg, Germany
127. May 19-23, 2014: Representation Theory, Integrable Systems, and Quantum Fields, Northwestern University, USA
128. April 1, 2014: Algebraic geometry seminar, Princeton, USA
129. Mar 3-7, 2014: Workshop on B-model aspect of Gromov-Witten theory, University of Michigan
130. Feb 10-14, 2014: Lecturer: Primitive forms and related subjects, Kavli IPMU, Japan
131. Nov 25, 2013: Geometry and Physics seminar, University of Michigan, USA
132. July 22, 2013: Invited seminar, Kavli IPMU, Japan
133. **July 16, 2013: The Sixth International Congress of Chinese Mathematicians, Taipei**
134. Apr 12-14, 2013: Mini-course for FRG Workshop on Gromov-Witten theory, Columbia University, USA
135. Mar 11, 2013: Geometry and Physics seminar, University of Michigan, USA
136. Jan 29, 2013: Differential geometry seminar, Harvard University, USA
137. Nov 30, 2012: Everytopic Seminar, Brandeis University, USA
138. Nov 27, 2012: GAP Seminar, Penn State University, USA
139. Sep 14-17, 2012: Boston-Keio Summer Workshop on Geometry, Boston University, USA
140. Aug 27, 2012: FRG Workshop: Generalized Geometry, String Theory, and Deformations, Harvard, USA
141. August 20-24, 2012: The Conference of Mirror Symmetry and Related Topics, KMUST, China
142. July 27-Aug 20, 2012: Summer course, MSC at Tsinghua University, China
143. August 10, 2012: Math Literature Seminar, MSC at Tsinghua University, China
144. July 18, 2012: Workshop on the mathematical aspects of quantum field theory, USTC, China
145. June 26, 2012: Geometry and Physics of the Landau-Ginzburg Model, IPMU, Japan
146. June 18, 2012: Quantization and Mathematics: An Undergraduate Conference, Northwestern University, USA
147. Mar 19, 2012: Geometry and Physics Seminar, University of Michigan, USA
148. Feb 18, 2012: Hong Kong Geometry Colloquium, Hong Kong

149. Feb 17,20, 2012: Geometry and Physics Seminar, HK Chinese Univ, Hong Kong
150. Feb 8,11, 2012: Geometry Seminar, HKUST, Hong Kong
151. Dec 9, 2011: Geometry Seminar, Boston University, USA
152. Nov 3, 2011: Felix Klein Seminar, University of Notre Dame, USA
153. Aug 3, 2011: Workshop on Chiral Differential Operators, Northwestern University, USA
154. July 19, 2011: Seminar on QFT, MIT, US
155. May 5, 2011: Mirror Symmetry Seminar, Simons Center for Geometry And Physics, Stonybrook
156. Mar 4, 2011: Algebraic Geometry Seminar, University of Wisconsin, USA
157. Feb 22, 2011: Differential Geometry Seminar, Harvard University, USA
158. Oct 14, 2010: Geometry/Physics Seminar, Northwestern University, USA
159. Sep 28, 2010: Differential Geometry Seminar, Harvard University, USA
160. Dec 4 2009: Differential Geometry Seminar, Harvard University, USA

Teaching and Mentorship

• Post-doc mentorship

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|-----------------------------|-----------------------------------------------------|
| – Jingyue Chen (2015-2018), | Faculty at Capital Normal University |
| – Weiqinag He (2015-2018), | Faculty at Sun Yat-sen University |
| – Hao Wen (2016-2019), | Faculty at Nankai University |
| – Xinxing Tang (2017-2021) | Faculty at Beijing Inst. of Math. Sci. App. (BIMSA) |
| – Jiawei Zhou (2019-2022) | Faculty at Nanchang University |
| – Hongfei Shu (2021-2023) | Faculty at Zhengzhou University |
| – Yong Li (2022-2024) | Faculty at Beijing Inst. of Math. Sci. App. (BIMSA) |

• Graduate (Ph.D.) mentorship

- Yifan Li (2014-2019)
Thesis: “**Algebraic Approaches to Landau-Ginzburg Orbifolds**”.
- Zhengping Gui (2016-2021)
Thesis: “**Chiral deformation theory of 2d conformal field theory**”
- Minghao Wang (2018-2023)
Thesis: “**Perturbative BV-BFV formalism with homotopic renormalization**”
- Gongwang Yan (2018-2023)
Thesis: “**Homological framework for quantum field theory on manifold with boundary: a case study**”
- Xiaoxiao Yang (2019-2025)
Thesis: “**Application and Generalization of Regularized Integral**”
- Tianqin Zhu (2020-2025)
Thesis: “**Quantum toroidal algebras, quantum difference equations and stable envelopes**”
- Peng Yang (2020-current)
- Linfang Hou (2024-current)

- Stanislav Ershov (2024-current)
- **Undergraduate thesis mentorship**
 - Yifan Wu (2024, Columbia)
 - Chenjing Bu (2021, Oxford)
 - Keyou Zeng (2018, Perimeter Institute)
 - Kai Xu (2018, Harvard)
 - Shaoyun Bai (2017, Princeton)
 - Yuxuan Yang (2017, Harvard)
 - Zhengping Gui (2016, Tsinghua)
 - Weifeng Sun (2016, Harvard)
- **Teaching (Tsinghua)**
 - Fall 2024: *Mathematical Methods in Quantum Mechanics* (undergraduate, 4 credits)
 - Fall 2024: *Linear Algebra (for physics major)* (undergraduate, 4 credits)
 - Fall 2023: *Ordinary Differential Equations* (undergraduate, 4 credits)
 - Fall 2023: *Quantum Mechanics* (new undergraduate course for Qiuzhen College, 4 credits)
 - Spring 2023: *Electrodynamics* (new undergraduate course for Qiuzhen College, 4 credits)
 - Fall 2022: *Classical Mechanics* (new undergraduate course for Qiuzhen College, 4 credits)
 - Spring 2021: *Algebraic Topology* (graduate course, 4 credits)
 - Fall 2020: *Mathematical Analysis-I* (undergraduate, 5 credits)
 - Spring 2020: *Algebraic Topology* (graduate course, 4 credits)
 - Spring 2019: *Noncommutative geometry* (new graduate course, 4 credits)
 - Spring 2019: *Mathematical Examples* (new undergraduate course for Yau Elite class, 2 credits)
 - Fall 2018: *Geometry and Symmetry* (new undergraduate course for Yau Elite class, 3 credits)
 - Spring 2018: *Algebraic Topology* (graduate course, evaluation top 5 % at Tsinghua, 4 credits)
 - Fall 2017: *Topics in mathematical physics-supersymmetry* (new graduate course, 4 credits)
 - Fall 2017: *Topology* (undergraduate, 3 credits)
 - Fall 2015: *Linear algebra* (undergraduate, 4 credits)
 - Spring 2015: *Topics in quantum field theory and geometric applications* (YMSC graduate, 4 credits)
 - Summer 2014: *Introduction to deformation quantization* (YMSC graduate, 2 credits)
 - Summer 2013: *Topics in quantum field theory* (YMSC graduate, 2 credits)