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INSPIRE <https://inspirehep.net/authors/1118666>

Academic Degrees

Dec 2020 HDR Université Bourgogne Franche-Comté (Habilitation à Diriger des Recherches)
 Thesis title: Instanton Counting, Quantum Geometry and Algebra

Mar 2012 PhD Department of Basic Science, University of Tokyo
 Thesis title: β -ensemble matrix models for orbifold partition function
 Supervisor: Prof. Shinobu Hikami

Mar 2009 MA Department of Basic Science, University of Tokyo
 Thesis title: Incompressible soliton fluid
 Supervisor: Prof. Shinobu Hikami

Mar 2007 BA College of Arts and Sciences, University of Tokyo

Academic Careers

2019 – Maître de Conférences (chercheur ISITE-BFC, 2019 – 2022)
 Institut de Mathématiques de Bourgogne (UMR 5584 CNRS)
 Université de Bourgogne, France

2015 – 2019 Research Associate (助教)
 Department of Physics, Keio University, Japan

2013 – 2015 Visiting Researcher
 Institut de Physique Théorique, CEA Saclay, France

2012 – 2015 Postdoctoral Researcher
 RIKEN Nishina Center, Japan

Awards

2019 – 2022	International Junior Fellowship, AAP ₃ ISITE-BFC Université Bourgogne Franche-Comté, France
2013 – 2015	Research Fellowship for Young Scientists (PD) Japan Society for the Promotion of Science, Japan
2011 – 2013	Research Fellowship for Young Scientists (DC2) Japan Society for the Promotion of Science, Japan

Academic Services

Memberships

2018 –	Member The Mathematical Society of Japan, Japan
2017	External Member CFGs, Institute for Basic Science, Korea
2009 –	Member / Board for JPS Jr. Session (2018 –) The Physical Society of Japan, Japan

Dissertation committee for

Dec 2023	Heral Aldarak	Université de Bourgogne	(Examinator)
Oct 2023	Thomas Chouteau	Université d'Angers	(Examinator)
Jan 2023	Helders Larraguível	University of Warsaw	(Reviewer)
May 2021	Rebecca Lodin	Uppsala University	(Opponent)

Reviewer for

Advances in High Energy Physics	Mathematical Physics, Analysis and Geometry
Advances in Mathematics	Nuclear Physics B
Annals of Mathematics	Physical Review B
Classical and Quantum Gravity	Physical Review Letters
Communications in Mathematical Physics	Physical Review Research
Europhysics Letters	Physics Letters B
Journal of Geometry and Physics	Progress of Theoretical and Experimental Physics
Journal of High Energy Physics	Scientific Reports
Journal of Mathematical Physics	SIGMA
Journal of Physics A: Mathematical and Theoretical	Thin Solid Films
Journal of the Physical Society of Japan	Transformation Groups
Letters in Mathematical Physics	

*Supervision of Graduate Students and Postdoctoral Fellows**PhD students*

2021 –	Ouneïs Gloton	IMB/UBFC (with D. Faenzi (IMB))
2019 – 2022	Nicolas Babinet	IMB/UBFC

Master students

2023 – 2024	Thomas Guerandel (M2), Yash Kumar (M2), Xavier Navand (M1), Yilu Shao (M2)	
2022 – 2023	Dogukan Bakircioglu (M2), Noan Botcazou-Brasse (stage), John Bucholtz (M2 & stage), Pavel Drozdov (M2), Johann Quenta (M2), Yilu Shao (M1)	
2021 – 2022	Mohamad Alameddine (M2), Pavel Drozdov (M1 & stage), S. Morteza Hosseini (M2), Fernanda Alemán Magdaleno (M1), Gabriel Niebel (M2), Milos Provci (stage) Sankarshan Sahu (stage), Ishan Singh (stage), Giovanny Soto (M2 & stage)	
2020 – 2021	Mohamad Alameddine (M1), Walid Al Hajj (M2), S. Morteza Hosseini (M2), Ahmed Rakin Kamal (M2 & stage), Osama Khlaif (stage), Gabriel Niebel (M1), Sanchita Sharma (M2), Marysteven Uchegbu (M1)	
2019 – 2020	Walid Al Hajj (M1), Ivana Martić (M1), Michael Murtagh (M2), Jordi Pillet (M1)	

Postdoctoral fellows

2019 – 2021	Ali Zahabi	IMB/UBFC
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Track Records

A List of Publications	4
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D Review Articles	12
E Presentations	12
F Research Grants	24
G Organized Workshops	25

A List of Publications

A.1 Original Papers (Refereed)

1. B. Filoche, S. Hohenegger, and T. Kimura,
“Non-perturbative Symmetries of Little Strings and Affine Quiver Algebras,”
JHEP (2024) to appear [[arXiv:2311.03858](#)].
2. T. Kimura and A. Zahabi,
“Universal Cusp Scaling in Random Partitions,”
Lett. Math. Phys. **114** (2024) 27 [[arXiv:2208.07288](#)].
3. T. Kimura and Y. Shao,
“Orthosymplectic Superinstanton Counting and Brane Dynamics,”
Lett. Math. Phys. **113** (2023) 122 [[arXiv:2306.08156](#)].
4. P. Drozdov and T. Kimura,
“Structure of deformed $w_{1+\infty}$ symmetry and topological generalization in Celestial CFT,”
Phys. Lett. B **847** (2023) 138272 [[arXiv:2306.11693](#)].
5. G. Fejős, T. Kimura, and Zs. Szép,
“Scale dependence of the Kondo interaction in the functional renormalization group formalism,”
Phys. Rev. B **108** (2023) 165147 [[arXiv:2306.09975](#)].
6. T. Kimura,
“Double Quiver Gauge Theory and BPS/CFT Correspondence,”
SIGMA **19** (2023) 039 [[arXiv:2212.03870](#)].
7. T. Kimura and N. Lee,
“Defect in Gauge Theory and Quantum Hall States,”
Nucl. Phys. B **991** (2023) 116218 [[arXiv:2210.05949](#)].

8. X. Wu and T. Kimura,
 “Boundary Condition Analysis of First and Second Order Topological Insulators,”
J. Phys. Cond. Matt. **34** (2022) 485001 [arXiv:2205.03035].
9. T. Kimura and S. Purkayastha,
 “Classical group matrix models and universal criticality,”
JHEP (2022) to appear [arXiv:2205.01236].
10. O. Khlaif and T. Kimura,
 “Virasoro Constraint for Uglov Matrix Model,”
JHEP **2204** (2022) 029 [arXiv:2201.06839].
11. T. Kimura and F. Nieri,
 “Intersecting Defects and Supergroup Gauge Theory,”
J. Phys. A **54** (2021) 435401 [arXiv:2105.02776].
12. T. Kimura and A. Zahabi,
 “Unitary matrix models and random partitions: Universality and multi-criticality,”
JHEP **2107** (2021) 100 [arXiv:2105.00509].
13. T. Kimura,
 “Hall and spin Hall viscosity ratio in 2d topological systems,”
J. Phys. Soc. Jpn. **90** (2021) 064705 [arXiv:1004.2668].
14. T. Kimura and A. Zahabi,
 “Universal edge scaling in random partitions,”
Lett. Math. Phys. **111** (2021) 48 [arXiv:2012.06424].
15. T. Kimura and R.-D. Zhu,
 “Bethe/gauge correspondence for SO/Sp gauge theories and open spin chains,”
JHEP **2103** (2021) 227 [arXiv:2012.14197].
16. T. Kimura, M. Panfil, Y. Sugimoto, and P. Sułkowski,
 “Branes, quivers and wave-functions,”
SciPost Phys. **10** (2021) 051 [arXiv:2011.06783].
17. T. Kimura,
 “ABCD of Kondo effect,”
J. Phys. Soc. Jpn. **90** (2021) 024708 [arXiv:2011.08301].
18. H.-Y. Chen, T. Kimura, and N. Lee,
 “Quantum Integrable Systems from Supergroup Gauge Theories,”
JHEP **2009** (2020) 104 [arXiv:2003.13514].

19. T. Kimura and Y. Sugimoto,
 “Topological Vertex/anti-Vertex and Supergroup Gauge Theory,”
JHEP **2004** (2020) 081 [arXiv:2001.05735].
20. T. Kimura,
 “Integrating over quiver variety and BPS/CFT correspondence,”
Lett. Math. Phys. **110** (2020) 1237-1255 [arXiv:1910.03247].
21. H.-Y. Chen, T. Kimura, and N. Lee,
 “Quantum Elliptic Calogero-Moser Systems from Gauge Origami,”
JHEP **2002** (2020) 108 [arXiv:1908.04928].
22. T. Kimura and R.-D. Zhu,
 “Web Construction of ABCDEFG and Affine Quiver Gauge Theories,”
JHEP **1909** (2019) 025 [arXiv:1907.02382].
23. T. Kimura, J. Nian, and P. Zhao,
 “Partition Functions of $\mathcal{N} = 1$ Gauge Theories on $S^2 \times \mathbb{R}_\epsilon^2$ and Duality,”
Int. J. Mod. Phys. A **35** (2020) 2050207 [arXiv:1812.11188].
24. T. Kimura and Y. Sugimoto,
 “Quantum mirror curve of periodic chain geometry,”
JHEP **1904** (2019) 147 [arXiv:1810.01885].
25. T. Kimura and S. Ozaki,
 “Conformal field theory analysis for QCD Kondo effect,”
Phys. Rev. D **99** (2019) 014040 [arXiv:1806.06486].
26. H.-Y. Chen and T. Kimura,
 “Quantum integrability from non-simply laced quiver gauge theory,”
JHEP **1806** (2018) 165 [arXiv:1805.01308].
27. T. Kimura and V. Pestun,
 “Fractional quiver W-algebras,”
Lett. Math. Phys. **108** (2018) 2425-2451 [arXiv:1705.04410].
28. T. Kimura, H. Mori, and Y. Sugimoto,
 “Refined geometric transition and qq -characters,”
JHEP **1801** (2018) 025 [arXiv:1705.03467].
29. K. Hashimoto, T. Kimura, and X. Wu,
 “Edge states at an intersection of edges of a topological material,”
Phys. Rev. B **95** (2017) 165443 [arXiv:1702.00624].

30. T. Kimura and S. Ozaki,
 “Fermi/non-Fermi mixing in $SU(N)$ Kondo effect,”
J. Phys. Soc. Jpn. **86** (2017) 084703 [arXiv:1611.07284].

31. A. Yamamoto and T. Kimura,
 “Quantum Monte Carlo simulation of topological phase transitions,”
Phys. Rev. **B94** (2016) 245112 [arXiv:1610.02154].

32. K. Hashimoto, T. Kimura, and X. Wu,
 “Boundary Conditions of Weyl Semimetals,”
PTEP **2017** (2017) 053I01 [arXiv:1609.00884].

33. T. Kimura and V. Pestun,
 “Quiver elliptic W-algebras,”
Lett. Math. Phys. **108** (2018) 1383–1405 [arXiv:1608.04651].

34. K. Hashimoto and T. Kimura,
 “Topological Number of Edge States,”
Phys. Rev. **B93** (2016) 195166 [arXiv:1602.05577].

35. T. Kimura and V. Pestun,
 “Quiver W-algebras,”
Lett. Math. Phys. **108** (2018) 1351–1381 [arXiv:1512.08533].

36. T. Fujimori, T. Kimura, M. Nitta, and K. Ohashi,
 “2d partition function in Ω -background and vortex/instanton correspondence,”
JHEP **1512** (2015) 110 [arXiv:1509.08630].

37. K. Hashimoto and T. Kimura,
 “Band spectrum is D-brane,”
PTEP **2016** (2016) 013B04 [arXiv:1509.04676].

38. T. Kimura and M. Murata,
 “Transport Process in Multi-Junctions of Quantum Systems,”
JHEP **1507** (2015) 072 [arXiv:1505.05275].

39. T. Kimura,
 “Linking loops in ABJM and refined theory,”
JHEP **1507** (2015) 030 [arXiv:1503.01462].

40. T. Kimura,

- “Duality and integrability of a supermatrix model with an external source,”
PTEP **2014** (2014) 123A01 [arXiv:1410.0680].
41. B. Eynard and T. Kimura,
 “Towards $U(N|M)$ knot invariant from ABJM theory,”
Lett. Math. Phys. **107** (2017) 1027–1063 [arXiv:1408.0010].
42. A. Shitade and T. Kimura,
 “Bulk Angular Momentum and Hall Viscosity in Chiral Superconductors,”
Phys. Rev. **B90** (2014) 134510 [arXiv:1407.1877].
43. T. Kimura and M. Murata,
 “Current Reflection and Transmission at Conformal Defects: Applying BCFT to Transport Process,”
Nucl. Phys. **B885** (2014) 266–279 [arXiv:1402.6705].
44. T. Kimura,
 “Note on a duality of topological branes,”
PTEP **2014** (2014) 103B04 [arXiv:1401.0956].
45. K. Hashimoto, N. Iizuka, and T. Kimura,
 “Towards Holographic Spintronics,”
Phys. Rev. **D91** (2015) 086003 [arXiv:1304.3126].
46. Y. Araki and T. Kimura,
 “Phase structure of two-dimensional topological insulators by lattice strong coupling expansion,”
Phys. Rev. **B87** (2013) 205440 [arXiv:1303.1255].
47. T. Kimura,
 “Hofstadter problem in higher dimensions,”
PTEP **2014** (2014) 103B05 [arXiv:1210.6355].
48. T. Kimura, S. Koyama, and N. Kurokawa,
 “Euler Products beyond the Boundary,”
Lett. Math. Phys. **104** (2014) 1–19 [arXiv:1210.1216].
49. T. Misumi, T. Kimura, and A. Ohnishi,,
 “QCD phase diagram with two-flavor lattice fermion formulations,”
Phys. Rev. **D86** (2012) 094505 [arXiv:1206.1977].
50. Y. Hidaka, Y. Hirono, T. Kimura, and Y. Minami,

“Viscoelastic-electromagnetism and Hall viscosity,”
PTEP **2013** (2013) 013A02 [arXiv:1206.0734].

51. T. Misumi, T. Z. Nakano, T. Kimura, and A. Ohnishi,
 “Strong-coupling Analysis of Parity Phase Structure in Staggered-Wilson Fermions,”
Phys. Rev. D **86** (2012) 034501 [arXiv:1205.6545].
52. T. Fujimori, T. Kimura, M. Nitta, and K. Ohashi,
 “Vortex counting from field theory,”
JHEP **1206** (2012) 028 [arXiv:1204.1968].
53. T. Kimura,
 “Spinless basis for spin-singlet FQH states,”
Prog. Theor. Phys. **128** (2012) 829–843 [arXiv:1201.1903].
54. T. Kimura, S. Komatsu, T. Noumi, T. Misumi, S. Torii, and S. Aoki,
 “Revisiting symmetries of lattice fermions via spin-flavor representation,”
JHEP **1201** (2012) 048 [arXiv:1111.0402].
55. T. Kimura and T. Nishioka,
 “The Chiral Heat Effect,”
Prog. Theor. Phys. **127** (2012) 1009–1017 [arXiv:1109.6331].
56. T. Kimura,
 “ β -ensembles for toric orbifold partition function,”
Prog. Theor. Phys. **127** (2012) 271–285 [arXiv:1109.0004].
57. T. Kimura and M. Nitta,
 “Vortices on Orbifolds,”
JHEP **1109** (2011) 118 [arXiv:1108.3563].
58. T. Kimura,
 “Matrix model from $\mathcal{N} = 2$ orbifold partition function,”
JHEP **1109** (2011) 015 [arXiv:1105.6091].
59. M. Creutz, T. Kimura, and T. Misumi,
 “Aoki Phases in the Lattice Gross–Neveu Model with Flavored Mass terms,”
Phys. Rev. D **83** (2011) 094506 [arXiv:1101.4239].
60. M. Creutz, T. Kimura, and T. Misumi,
 “Index Theorem and Overlap Formalism with Naive and Minimally Doubled Fermions,”
JHEP **1012** (2010) 041 [arXiv:1011.0761].

61. T. Kimura and T. Misumi,
 “Characters of Lattice Fermions Based on the Hyperdiamond Lattice,”
Prog. Theor. Phys. **124** (2010) 415–432 [arXiv:0907.1371].
62. T. Kimura and T. Misumi,
 “Lattice Fermions Based on Higher-Dimensional Hyperdiamond Lattices,”
Prog. Theor. Phys. **123** (2010) 63–78 [arXiv:0907.3774].
63. T. Kimura,
 “Vortex Description of Quantum Hall Ferromagnets,”
Int. J. Mod. Phys. A **25** (2010) 993–1008 [arXiv:0906.1764].

A.2 Original Papers (preprint; non-refereed)

64. T. Kimura and G. Noshita,
 “Gauge origami and quiver W-algebras” [arXiv:2310.08545].
65. T. Kimura and M. Watanabe,
 “Band Flattening and Overlap Fermion” [arXiv:2309.12174].
66. T. Kimura,
 “Higgsing qq -character and irreducibility” [arXiv:2205.08312].
67. N. Babinet and T. Kimura,
 “Pfaffian Interaction and BCD-quiver Matrix Models” [arXiv:2205.02527].
68. N. Babinet and T. Kimura,
 “Characteristic Polynomials in Coupled Matrix Models” [arXiv:2202.09585].
69. T. Kimura and E. A. Mazenc,
 “The Schur Expansion of Characteristic Polynomials and Random Matrices” [arXiv:2111.02365].
70. T. Kimura,
 “A refinement of Sato-Tate conjecture” [arXiv:2101.05193].
71. T. Kimura and V. Pestun,
 “Twisted reduction of quiver W-algebras” [arXiv:1905.03865].
72. T. Kimura and V. Pestun,
 “Super instanton counting and localization” [arXiv:1905.01513].

B Conference Proceedings

73. T. Kimura,
 “Double quantization of Seiberg–Witten geometry and W-algebras,”
Proc. Symp. Pure Math. **100** (2018) 405–431 [[arXiv:1612.07590](#)].
74. T. Kimura,
 “Domain-wall, overlap, and topological insulators,”
PoS Lattice2015 (2015) 042 [[arXiv:1511.08286](#)].
75. Y. Araki, T. Kimura, A. Sekine, K. Nomura, and T. Z. Nakano,
 “Phase structure of topological insulators by lattice strong-coupling expansion,”
PoS Lattice2013 (2013) 050 [[arXiv:1311.3973](#)].
76. T. Z. Nakano, T. Misumi, T. Kimura, and A. Ohnishi,
 “Strong coupling analysis of Aoki phase in Staggered-Wilson fermions,”
PoS Lattice2012 (2012) 203 [[arXiv:1210.5954](#)].
77. T. Kimura, T. Misumi, and A. Ohnishi,
 “QCD Phase Diagram with two-flavor Lattice Fermion Formulations,”
PoS Lattice2012 (2012) 079 [[arXiv:1210.6357](#)].
78. T. Kimura, M. Creutz, and T. Misumi,
 “Index Theorem and Overlap Formalism with Naive and Minimally Doubled Fermions,”
PoS Lattice2011 (2011) 106 [[arXiv:1110.2482](#)].
79. T. Misumi, M. Creutz, T. Kimura, T. Z. Nakano, and A. Ohnishi,
 “Aoki Phases in Staggered-Wilson Fermions,”
PoS Lattice2011 (2011) 108 [[arXiv:1110.1231](#)].
80. T. Misumi, M. Creutz, and T. Kimura,
 “Classification and Generalization of Minimal-doubling actions,”
PoS Lattice2010 (2010) 260 [[arXiv:1010.3713](#)].

C Research Monographs

Monographs

81. T. Kimura,
 “Instanton Counting, Quantum Geometry and Algebra”,
 Springer Int. Pub., 2021, ISBN: 978-3-030-76190-5.
82. T. Kimura,
 “Mathematical Physics of Random Matrices” (ランダム行列の数理),
 Morikita Publishing, 2021, ISBN: 978-4-627-06301-3.

Chapter contributions

83. T. Kimura,
 “Analysis of Topological Material Surfaces,”
Heterojunction and Nanostructures, V. N. Stavrou (Ed.), IntechOpen, 2018.
84. T. Kimura,
 “Gauge Theory, Combinatorics, and Matrix Models,”
Linear Algebra - Theorems and Applications, H. A. Yasser (Ed.), IntechOpen, 2012.

D Review Articles

85. T. Kimura,
 “Quiver gauge theory and quiver W-algebra,”
 Prepared for MSJ Spring Meeting 2018
86. T. Kimura,
 “Quantum Field Theory, Quantum Geometry, and Quantum Algebras,”
 (場の量子論：幾何の量子化と量子代数)
Suurikagaku **653** (2017) 56–63. [arXiv:1705.05099].
87. B. Eynard, T. Kimura, and S. Ribault,
 “Random Matrices,”
 Lecture series in IPhT, CEA Saclay, 2015 [arXiv:1510.04430].

E Presentations

E.1 Invited Conferences / Colloquia / Lectures

88. The 1st SUIAS workshop in HEP: Supersymmetry and Gravitation
 BPS/CFT in 8d
 Aug 2022, Suzhou, China (online)
89. Rigorous Statistical Mechanics and Related Topics
 Universal multi-critical fluctuation of random partition
 Nov 2021, Kyoto, Japan (online)
90. The 21st International Conference on Discrete Geometric Analysis for Materials Design
 Non-Hermitian system, Band flattening, and Overlap fermion
 Sep 2021, Nagoya, Japan (online)
91. 76th JPS annual meeting
 Kondo effect and Conformal field theory
 Mar 2021, Tokyo, Japan (online)

92. Journée de l'équipe GADT
Integrating over quiver variety and BPS/CFT correspondence
Jan 2020, Dijon, France
93. Colloque de l'Institut de Mathématiques de Bourgogne
Quantum infinite symmetry from quantum gauge theory
Dec 2019, Dijon, France
94. BPS/CFT Correspondence
Free field realization in BPS/CFT
Sep 2019, Marseille, France
95. Strings, Branes and Gauge Theories
Super instanton counting and localization
Jul 2019, Pohang, Korea
96. Representation theory, gauge theory and integrable systems
Geometry of quiver W-algebra
Feb 2019, Kashiwa, Japan
97. Spectra of Random Operators and Related Topics
A super random partition model
Jan 2019, Kyoto, Japan
98. Noncommutative geometry and Mathematical Physics 2018
Introduction to W-algebras
Nov 2018, Yokohama, Japan
99. Geometric Correspondences of Gauge Theories
Quantum algebras from quiver gauge theory
Aug 2018, Vienna, Austria
100. Progress in the Mathematics of Topological States of Matter
Topological order is higher-form SSB
Aug 2018, Sendai, Japan
101. 日本数学会2018年度年会/MSJ Spring Meeting 2018
Quiver gauge theory and quiver W-algebra
Mar 2018, Tokyo, Japan
102. 多重三角関数とその一般化/Multiple trigonometric functions and their generalizations
Multiple functions in Quantum Field Theory
Mar 2018, Kobe, Japan
103. Localization Techniques in Quantum Field Theories

Fractional quiver gauge theory

Feb 2018, Stony Brook, USA

104. Topological Science Workshop 2017

Boundary condition analysis of topological materials

Feb 2017, Yokohama, Japan

105. Kickoff Symposium: New development of algebraic geometry viewed from theoretical physics

From Seiberg-Witten curve to quiver W-algebras

Feb 2017, Kyoto, Japan

106. Topological Science Kick-off Symposium 2016

Topological insulator and lattice fermion

Mar 2016, Yokohama, Japan

107. 慶應義塾大学自然科学研究教育センター講演会第37回 / 37th RECNS Symposium, Keio University

物理学とトポロジー / Topology and Physics

Dec 2016, Yokohama, Japan

108. 離散的手法による場と時空のダイナミクス研究会 2016 / Workshop on dynamics of fields and spacetime by discretized methods 2016

トポロジカル相と場の理論 / Quantum field theory and topological phases

Sep 2016, Shizuoka, Japan

109. ランダム作用素のスペクトルと関連する話題 / Spectra of Random Operators and Related Topics

モジュライ空間の二重量子化とW代数 / Double quantization of moduli space and W-algebra

Dec 2016, Yokohama, Japan

110. 日本物理学会 (第71回年次大会) / 71st JPS annual meeting

トポロジカル絶縁体とDブレーンの対応 / D-brane and topological phases

Mar 2016, Sendai, Japan

111. Spectra of Random Operators and Related Topics

Matrix integral and representation theory: a physical point of view

Dec 2015, Yokohama, Japan

112. エキゾチック時空幾何とその応用 / Exotic geometry and its applications

輸送現象と時空 / Spacetime and transport phenomena

Feb 2013, Wako, Japan

113. YIPQS-HPCI international molecule-type work shop on New-type of Fermions on the Lattice

Aoki phases in the lattice Gross-Neveu model with staggered Wilson fermion

Feb 2012, Kyoto, Japan

114. 行列模型とその周辺 / Workshop on matrix model and related topics

組合せ論と行列模型 / Matrix model and combinatorics

Feb 2012, Tokyo, Japan

115. 日本物理学会 (2012年秋季大会) / JPS autumn meeting 2012
 ゲージ理論とランダム行列 / Gauge theory and random matrices
 Sep 2012, Yokohama, Japan

E.2 Contributed Talks

116. East Asia Joint Workshop on Fields and Strings 2017
 Double quantization of Seiberg–Witten geometry and quiver W-algebras
 Nov 2017, Tsukuba, Japan
117. Strings and Fields 2017
 Non-simply-laced quiver gauge theory from Omega-background
 Aug 2017, Kyoto, Japan
118. 2016 AMS von Neumann Symposium: Topological Recursion and its Influence in Analysis, Geometry, and Topology
 Double Quantization of Seiberg–Witten Geometry and W-algebras
 Jul 2016, Charlotte, USA
119. Developments in String Theory and Quantum Field Theory 2015
 Band spectrum as D-brane shape
 Nov 2015, Kyoto, Japan
120. The 33th International Symposium on Lattice Field Theory (LATTICE 2015)
 Domain-wall, overlap, and topological insulators
 Jul 2015, Kobe, Japan
121. The 6th Bethe Center Workshop: Topological Strings and Applications
 Towards $U(N|M)$ knot invariant from ABJM theory
 Sep 2014, Bonn, Germany
122. Field Theory and String Theory 2013
 Topological vertex for Type IIA string on $C^2/\mathbb{Z}_k \times CY_3$
 Aug 2013, Kyoto, Japan
123. The 25th IUPAP International Conference on Statistical Physics (STATPHYS 25)
 Scaling behavior of Euler products and random matrix theory
 Jul 2013, Seoul, Korea
124. Emergent Quantum Phases in Condensed Matter
 Spin transport via gauge/gravity duality

Jun 2013, Kashiwa, Japan

125. Field Theory and String Theory 2012

Vortex counting from field theory

Jul 2012, Kyoto, Japan

126. International Conference on Topological Quantum Phenomena

Spinless basis for spin-singlet FQH states

May 2012, Nagoya, Japan

127. The 30th International Symposium on Lattice Field Theory (LATTICE 2012)

QCD Phase Diagram with 2-flavor Lattice Fermion Formulations

Jun 2012, Cairns, Australia

128. Infinite Analysis 2011

Instanton counting on ALE spaces and root of unity limit of q-Nekrasov function

Jul 2011, Tokyo, Japan

129. The 29th International Symposium on Lattice Field Theory (LATTICE 2011)

Index theorem and overlap formalism with naive and minimally doubled fermions

Jul 2011, Squaw Valley, USA

130. International Workshop on Statistical Physics of Quantum Systems

Hall and spin Hall viscosity ratio in topological insulators

Aug 2010, Tokyo, Japan

E.3 Presentations at JPS meeting

131. Fermi/non-Fermi mixing in $SU(N)$ Kondo system: conformal field theory analysis / 非フェルミ液体固定点からのフェルミ液体的励起状態: 共形場理論による $SU(N)$ 近藤効果の解析

Mar 2017, Toyonaka, Japan

132. Elliptic CFT and quantum Hall state / 共形場理論の楕円変形と量子ホール状態

Sep 2016, Kanazawa, Japan

133. Topological edge state and boundary condition / トポロジカル端状態と境界条件

Sep 2016, Kanazawa, Japan

134. Topological Insulator and D-brane / トポロジカル絶縁体とDブレーンの対応

Mar 2016, Sendai, Japan

135. Duality for External Sources in the Random Matrix Model / ランダム行列模型における特性多項式と外場の双対性

Mar 2014, Hiratsuka, Japan

- 136. Spin transport analysis via gauge/gravity duality / ゲージ重力対応によるスピン輸送現象
Sep 2013, Kochi, Japan
- 137. Deep Riemann Hypothesis and scaling law of Euler product / ゼータ関数・ L 関数における深リーマン予想とオイラー積のスケーリング則
Sep 2013, Tokushima, Japan
- 138. Spin-singlet FQH states and q -deformed CFT / 多成分分数量子ホール系における一重項状態と q 変形共形場理論
Mar 2013, Higashihiroshima, Japan
- 139. Vortex counting from field theory / 非可換渦分配関数の場の理論からの導出
Sep 2012, Kyoto, Japan
- 140. Strong coupling analysis and chiral limit with staggered-Wilson fermion / スタッガードウィルソンフェルミオンを用いた強結合解析とカイラル極限
Mar 2012, Nishinomiya, Japan
- 141. Asymptotics of orbifold partition function and matrix model description / 組合せ論的オービフォルド分配関数の漸近挙動と行列模型
Sep 2011, Toyama, Japan
- 142. Dissipationless viscosity in topological insulators / トポロジカル絶縁体における非散逸粘性
Sep 2010, Sakai, Japan
- 143. General dimensional Creutz fermion and single chiral mode / クロイツ作用の一般次元化と1自由度フェルミオンの出現可能性について
Mar 2010, Okayama, Japan
- 144. Combinatorial Representation and Thermodynamical Behavior of Eigenstate Norm in Finite Temperature Sutherland Model / 有限温度サザーランド模型における状態ノルムの組み合わせ論的表示と熱力学極限
Sep 2009, Kumamoto, Japan
- 145. General dimensional hyperdiamond lattices / 一般次元における超ダイヤモンド格子
Mar 2009, Tokyo, Japan

E.4 Seminar Talks

- 146. Bielefeld–Melbourne Random Matrices Seminar
Multicritical edge/cusp scaling limit in random partitions
Nov 2022, online,
- 147. Séminaire Groupes, Représentations et Géométrie
Variétés de carquois et qq -caractère

Oct 2022, Paris, France

148. ReNewQuantum seminar

Instanton counting and q -deformation of Virasoro/ W -constraint
May 2022, online,

149. Institut Denis Poisson, Séminaire de Physique Théorique

Théorie de jauge de supergroupe: instantons, localisation et défauts
Dec 2021, Tours, France

150. LAREMA séminaire de géométrie algébrique

Variété de carquois et quantification de l'espace des modules
Nov 2021, Angers, France

151. Berkeley String-Math Seminar

Aspects of supergroup gauge theory
May 2021, Berkeley, USA (online)

152. Séminaire du Laboratoire de Mathématiques de Reims

Quantification de l'espace de modules et W -algèbre de carquois
Apr 2021, Reims, France (online)

153. Université Claude Bernard Lyon 1 ICJ Séminaire Physique Mathématique

Refined Sato–Tate conjecture
Jan 2021, Lyon, France (online)

154. DESY Theory Group String Theory Journal Club

Yet another affinization of geometric Langlands correspondence
Feb 2020, Hamburg, Germany

155. Keio University Topological Science Seminar

Instanton counting and infinite symmetry
Aug 2019, Yokohama, Japan

156. Meijigakuin University, Institute of Physics Seminar

Super instanton counting and localization
Jul 2019, Yokohama, Japan

157. Department of Physics, Chuo University

Random matrices and mathematical physics
Jul 2019, Tokyo, Japan

158. RIKEN iTHEMS-STAMP Seminar

Kondo effect and Conformal Field Theory

Jul 2019, Wako, Japan

159. Nagoya University, Math. Phys. seminar
Super instanton counting and localization
Jul 2019, Nagoya, Japan
160. Kyoto University Particle Physics Group seminar
Instantons in supergroup gauge theory
Jun 2019, Kyoto, Japan
161. Tokyo Metropolitan University Geometry seminar
Super instanton counting and localization
May 2019, Hachioji, Japan
162. Titech, Particle theory group seminar
Super instanton counting and localization
May 2019, Tokyo, Japan
163. Institut de Mathématiques de Bourgogne, Séminaire de mathématique-physique
Quiver gauge theory and quiver W-algebras
Mar 2019, Dijon, France
164. University of Tokyo, MS seminar
Random matrices and integrability
Jan 2019, Tokyo, Japan
165. Chuo University, Statistical mechanics and probability seminar
Elliptic analog of random partition model and elliptic W-algebras
Dec 2018, Tokyo, Japan
166. Kavli IPMU, University of Tokyo, MS seminar
Super-instanton counting
Sep 2018, Kashiwa, Japan
167. Keio University, Dept. Phys. Seminar
Topological Materials –Revisiting Boundary Conditions–
Jul 2018, Yokohama, Japan
168. KIAS, String Theory seminar
Double quantization of Seiberg-Witten geometry and quiver W-algebras (Part I & II)
Mar 2018, Seoul, Korea
169. Perimeter Institute, Math Phys seminar
Quantum integrability, W-algebra from quiver gauge theory

Feb 2018, Waterloo, Canada

170. Rikkyo University Math Phys seminar

Double quantization of Seiberg–Witten geometry and quiver W-algebras

Oct 2017, Tokyo, Japan

171. National Taiwan University, String theory group seminar

$4d \mathcal{N} = 2$ index from 6d

Oct 2017, Taipei, Taiwan

172. University of Warsaw String theory Journal club

Double quantization of Seiberg–Witten geometry and quiver W-algebras

Sep 2017, Warsaw, Poland

173. NUS string theory group seminar

Double quantization of Seiberg–Witten geometry and quiver W-algebras

Aug 2017, Singapore, Singapore

174. IBS Fields, Gravity & Strings seminar

Elliptic vertex operator and topological string amplitude

Aug 2017, Seoul, Korea

175. 成蹊大学物理理論セミナー / Seikei University Theoretical Physics Seminar

Seiberg–Witten 曲線の2重量子化と籓W代数

Jun 2017, Tokyo, Japan

176. IBS Fields, Gravity & Strings seminar

Refined geometric transision and qq -characters

May 2017, Seoul, Korea

177. Titech, Particle theory group seminar

Boundary conditions of topological materials and edge-of-edge state

Apr 2017, Tokyo, Japan

178. Titech, Stat mech group seminar

Determinant structure and integrability in random matrix theory

Mar 2017, Tokyo, Japan

179. IBS Fields, Gravity & Strings seminar

Lectures on quantization of Seiberg–Witten geometry and quiver W-algebras

Mar 2017, Seoul, Korea

180. Fudan University, Center for Field Theory and Particle Physics seminar

Quantization of Seiberg–Witten geometry and quiver W-algebras

Mar 2017, Shanghai, China

181. Fudan University, Center for Field Theory and Particle Physics seminar
Boundary Conditions of Topological Insulators and Weyl Semimetals
Mar 2017, Shanghai, China
182. IBS Fields, Gravity & Strings seminar
Lectures on matrix model approach to $\mathcal{N} = 2$ gauge theories
Feb 2017, Seoul, Korea
183. 理化学研究所初田量子ハドロン物理学研究室セミナー / RIKEN, QHP group seminar
Boundary Conditions of Topological Insulators and Weyl Semimetals
Jan 2017, Wako, Japan
184. 東北大学素粒子・宇宙理論研究室セミナー / Tohoku University, Particle Theory and Cosmology Group Seminar
Topological order and higher-form symmetry
Dec 2016, Sendai, Japan
185. Institut des Hautes Études Scientifiques, Séminaire de Physique Théorique
Elliptic deformation of W-algebras from 6d quiver gauge theory
Nov 2016, Bures-sur-Yvette, France
186. Imperial College London, String theory group seminar
Elliptic deformation of W-algebras from 6d quiver gauge theory
Nov 2016, London, United Kingdom
187. National Taiwan University, String theory group seminar
Quiver W-algebras
Oct 2016, Taipei, Taiwan
188. KEK 理論センターセミナー / KEK Theory group seminar
Boundary condition analysis of topological insulators
Jul 2016, Tsukuba, Japan
189. 日露2国間交流事業「対称性と双対性による量子幾何学の探究」ワーキングセミナー / Exploration of Quantum Geometry via Symmetry and Duality, Working seminar
Quiver W-algebras
Jul 2016, Tokyo, Japan
190. 大阪大学素粒子論研究室セミナー / Osaka University, Particle theory group seminar
Conformal field theory approach to QCD Kondo effect
Jun 2016, Toyonaka, Japan
191. 名古屋大学 EHQG セミナー / Nagoya University, EHQG group seminar

Topological insulator edge state and D-branes

May 2016, Nagoya, Japan

192. 大阪大学素粒子論研究室セミナー / Osaka University, Particle theory group seminar

Quiver W-algebras

Mar 2016, Toyonaka, Japan

193. 東京大学素粒子論研究室セミナー / University of Tokyo, Particle theory group seminar

Quiver W-algebras

Feb 2016, Tokyo, Japan

194. 東京工業大学素粒子論研究室セミナー / Titech, Particle theory group seminar

Band spectrum is D-brane

Jan 2016, Tokyo, Japan

195. 東京大学駒場素粒子論研究室セミナー / University of Tokyo, Komaba particle theory group seminar

2d Omega-background revisited

Oct 2015, Tokyo, Japan

196. 理化学研究所初田量子ハドロン物理学研究室セミナー / RIKEN, QHP group seminar

Domain-wall/Overlap, and topological insulator

Oct 2015, Wako, Japan

197. 大阪大学素粒子論研究室セミナー / Osaka University, Particle theory group seminar

Lattice, SUSY, and topological phases

Jul 2015, Toyonaka, Japan

198. Séminaire de Laboratoire de Physique Théorique d'Orsay

Introduction to ABJM theory

Jan 2015, Orsay, France

199. Crete Center for Theoretical Physics, HEP Seminar

FQH/CFT and its deformation

Nov 2014, Heraklion, Greece

200. Academy of Sciences of the Czech Republic, Institute of Physics Seminar

Wilson loop as a source in matrix model

Oct 2014, Prague, Czech Republic

201. 東京大学カブリ数物連携宇宙研究機構 MS セミナー / University of Tokyo, Kavli IPMU MS seminar

FQH/CFT and q -CFT

Mar 2014, Kashiwa, Japan

202. 京都大学基礎物理学研究所素粒子論セミナー / Kyoto University, YITP particle theory group seminar

Spin transport analysis via gauge/gravity duality

May 2013, Kyoto, Japan

203. 分子科学研究所理論計算分子科学研究領域オープンセミナー / IMS Theoretical computational molecular science open seminar

トポロジカル物質相と格子フェルミオン / Topological phases of matter and lattice fermion

Feb 2013, Okazaki, Japan

204. 京都大学凝縮系理論研究室セミナー / Kyoto University, Condensed-matter theory group seminar

Transport phenomena and gauge theory of gravity

Nov 2012, Kyoto, Japan

205. 大阪大学素粒子論研究室セミナー / Osaka University, Particle theory group seminar

Matrix models for Seiberg-Witten theory

Nov 2012, Toyonaka, Japan

206. 大阪大学素粒子論研究室セミナー / Osaka University, Particle theory group seminar

Recent topics on lattice fermions

Nov 2012, Toyonaka, Japan

207. 中央大学物理学科談話会 / Chuo University, Department of Physics Colloquium

超対称ゲージ理論と組合せ論, ランダム行列 / SUSY gauge theory, combinatorics, and random matrices

Nov 2012, Tokyo, Japan

208. 中央大学統計力学・確率論セミナー / Chuo University, Statistical mechanics and probability seminar

ゼータ関数の統計力学とランダム行列 / Statistical mechanics of zeta function and random matrices

Oct 2012, Tokyo, Japan

209. 東京大学素粒子論研究室セミナー / University of Tokyo, Particle theory group seminar

Vortex counting from field theory

Jul 2012, Tokyo, Japan

210. 立教大学数理物理学研究センターセミナー / Rikkyo University, Mathematical physics research center seminar

Gauge theory and matrix models: β -deformation and orbifolding

Jun 2012, Tokyo, Japan

211. 東京工業大学数論研究室セミナー / Titech, Number theory group seminar

Random matrix, zeta function, statistical mechanics

Jun 2012, Tokyo, Japan

212. 筑波大学素粒子論研究室セミナー / Tsukuba University, Particle theory group seminar

Aoki phases in staggered-Wilson fermions

Jun 2012, Tsukuba, Japan

213. 名古屋大学数理論理・弦理論セミナー / Nagoya University, Mathematical physics and string theory seminar

Fractional quantum Hall effect, conformal field theory, and symmetric polynomials

May 2012, Nagoya, Japan

214. 数理論理・物性基礎論セミナー / Mathematical physics and condensed-matter theory seminar

組合せ論とランダム行列 / Random matrix theory and combinatorics

Apr 2012, Tokyo, Japan

215. 京都大学素粒子論研究室セミナー / Kyoto University, Particle theory group seminar

Beta-ensemble matrix models for orbifold partition function

Oct 2011, Kyoto, Japan

216. 東京工業大学素粒子論研究室セミナー / Titech, Particle theory group seminar

Beta-ensemble matrix models for orbifold partition function

Sep 2011, Tokyo, Japan

217. 東京大学理論ハドロン物理学研究室セミナー / University of Tokyo, Theoretical Hadron physics group seminar

Dissipationless viscosity in topological insulators

Sep 2010, Tokyo, Japan

218. 東京大学理論ハドロン物理学研究室セミナー / University of Tokyo, Theoretical Hadron physics group seminar

Lattice fermions on hyperdiamond lattices

Oct 2009, Tokyo, Japan

F Research Grants

219. EUR-EIPHI, BFC-Region

Role: Co-PI

Title: SupToPhAG

Period: Sep 2021 – Aug 2023

220. International Junior Fellowship AAP3 ISITE-BFC

Role: PI

Title: Champs quantiques et quantification de l'algèbre et de la géométrie / Quantum field and quantization of algebra and geometry (CQAG) [ANR-15-IDEX-0003]

Period: Sep 2019 – Aug 2022

Amount: 450k€

221. Keio Gijuku Academic Development Funds

Role: PI

Title: Quantum Algebraic Structure in Gauge Theory

Period: Apr 2018 – Mar 2019

Amount: 300k JPY

222. JSPS: Grant-in-Aid for Young Scientists (B)

Role: PI

Title: Gauge theory duality and quiver W-algebras [17K18090]

Period: Apr 2017 – Mar 2020

Amount: 3,250k JPY

223. Keio Gijuku Academic Development Funds

Role: PI

Title: Duality in quantum field theory and its applications

Period: Apr 2016 – Mar 2018

Amount: 800k JPY

224. JSPS: Grant-in-Aid for JSPS Fellows

Role: PI

Title: Universality of matrix model and its application [13J04302]

Period: Apr 2013 – Mar 2016

Amount: 4,680k JPY

225. JSPS: Grant-in-Aid for JSPS Fellows

Role: PI

Title: Duality and topology in condensed-matter theory [11J00593]

Period: Apr 2011 – Mar 2013

Amount: 1,300k JPY

225. JSPS: Grant-in-Aid for Scientific Research on Innovative Areas

Role: Co-Investigator

Title: Study of Topological Materials lead by quantum anomalies, branes and solitons [17H06462]

Period: Jun 2017 – Mar 2020

Amount: 88,660k JPY (shared)

G Organized Workshops

227. New Trends in Non-Perturbative Gauge/String Theory and Integrability

Date: Jun 2022

Place: Institut de Mathématiques de Bourgogne, Dijon

URL: <https://indico.math.cnrs.fr/event/7471/>

228. Recent Developments in Gauge Theory and String Theory

Date: Sep 2018

Place: Keio University, Yokohama

URL: http://user.keio.ac.jp/~k_tar/WS/WS2018.html

229. Avenues of Quantum Field Theory in Curved Spacetime

Date: Jul 2018

Place: Keio University, Yokohama

URL: http://user.keio.ac.jp/~flachi_nino/

230. Topological Science Workshop 2017

Date: Feb 2017

Place: Keio University, Yokohama

URL: <https://sites.google.com/site/keiotopsci/workshop/ws2017>

231. New Developments of Kondo Effect in Nuclear Physics

Date: Dec 2016

Place: Keio University, Yokohama

URL: http://user.keio.ac.jp/~k_tar/WS/NK2016.html

232. Topological Materials Science: Intensive-Interactive Meeting

Date: Nov 2016

Place: Keio University, Yokohama

URL: <https://sites.google.com/site/keiotopsci/workshop/tms2016>

233. Topological Science Kick-off Symposium 2016

Date: Mar 2016

Place: Keio University, Yokohama

URL: <https://sites.google.com/site/keiotopsci/workshop/Kickoff2016>

234. Workshop on Topological String and Related Topics

Date: Sep 2015

Place: Keio University, Yokohama

URL: http://user.keio.ac.jp/~k_tar/WS/TS2015.html

235. Exotic geometry and its applications

Date: Feb 2013

Place: RIKEN, Wako

URL: <http://ribf.riken.jp/~tkimura/Workshop.html>