

## TARO KIMURA 木村太郎 – CURRICULUM VITÆ –

Adresse prof. Institut de Mathématiques de Bourgogne, Université de Bourgogne  
9 avenue Alain Savary, BP 47870, 21078 Dijon Cedex, France

E-mail taro.kimura@u-bourgogne.fr

Tél +33 (0)3 80 39 58 30

Page web <https://kimura.pages.math.cnrs.fr/>

### Emplois

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

2015 – 2019 Associé de recherche (助教)  
Department of Physics, Keio University, Japan

2013 – 2015 Chercheur invité  
Institut de Physique Théorique, CEA Saclay, France

2012 – 2015 Chercheur postdoctoral  
RIKEN Nishina Center, Japan

### Diplômes

Dec 2020 HDR Université Bourgogne Franche-Comté, ED Carnot–Pasteur  
Titre: Instanton Counting, Quantum Geometry and Algebra [arXiv:2012.11711]

Mar 2012 PhD Department of Basic Science, University of Tokyo  
Titre:  $\beta$ -ensemble matrix models for orbifold partition function  
Directeur de thèse: Prof. Shinobu Hikami

Mar 2009 MA Department of Basic Science, University of Tokyo  
Titre: Incompressible soliton fluid  
Directeur de thèse: Prof. Shinobu Hikami

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

Mar 2009 Diplôme d'enseignement secondaire (classe supérieure), Japon

Aug 2007 Diplôme d'enseignement secondaire (classe normale), Japon

## Prix et distinctions

2019 – 2022	International Junior Fellowship, AAP <sub>3</sub> ISITE-BFC Université Bourgogne Franche-Comté, France
2013 – 2015	Research Fellowship for Young Scientists (PD) Japan Society for the Promotion of Science, Japon
2011 – 2013	Research Fellowship for Young Scientists (DC2) Japan Society for the Promotion of Science, Japon
2011	Type I Scholarship : Repayment Exemption for Students with Excellent Grades (niveau doctoral) Japan Student Services Organization, Japon
2009	Type I Scholarship : Repayment Exemption for Students with Excellent Grades (niveau master) Japan Student Services Organization, Japon

## Bourses

2021 – 2024	Co-PI, « SupToPhAG » EUR-EIPHI, BFC-Regione [link]
2019 – 2022	PI, « CQAG » International Junior Fellowship AAP <sub>3</sub> ISITE-BFC, [ANR-15-IDEX-0003]
2018 – 2019	PI, « Quantum Algebraic Structure in Gauge Theory » Keio Gijuku Academic Development Funds
2017 – 2020	Co-PI, « Study of Topological Materials lead by quantum anomalies, branes and solitons » JSPS: Grant-in-Aid for Scientific Research on Innovative Areas [17H06462]
2017 – 2020	PI, « Gauge theory duality and quiver W-algebras » JSPS : Grant-in-Aid for Young Scientists (B) [17K18090]
2017 – 2020	Membre, « Discrete Geometric Analysis for Materials Design » JSPS: Grant-in-Aid for Scientific Research on Innovative Areas [link]
2016 – 2018	PI, « Duality in quantum field theory and its applicatioins » Keio Gijuku Academic Development Funds
2015 – 2020	Membre, « Topological Science » MEXT-Supported Program for the Strategic Research Foundation at Private Universities [link]
2015 – 2020	Membre, « Topological Materials Science » JSPS : Grant-in-Aid for Scientific Research on Innovative Areas
2013 – 2016	PI, « Universality of matrix model and its application » JSPS : Grant-in-Aid for JSPS Fellows [13J04302]
2011 – 2013	PI, « Duality and topology in condensed-matter theory » JSPS : Grant-in-Aid for JSPS Fellows [11J00593]

## Services académiques

### *Adhésion*

2018 –	Membre	The Mathematical Society of Japan, Japan
2017	Membre externe	CFGS, Institute for Basic Science, Korea
2009 –	Membre	The Physical Society of Japan, Japan

### *Responsabilités institutionnelles*

2022 –	Membre du conseil du laboratoire	IMB, Université de Bourgogne
2018 –	Membre de comité des juges	The Physical Society of Japan
2015 – 2019	Membre de comité	RECNS, Keio University

### *Comité de thèse*

Dec 2023	Heral Aldarak	Université de Bourgogne	(examinateur)
Oct 2023	Thomas Chouteau	Université d'Angers	(examinateur)
Jun 2023	Soufiane Oukassi	Université Paris-Saclay	(comité de suivi de thèse)
Jan 2023	Helders Larraguível	University of Warsaw	(rapporteur)
May 2021	Rebecca Lodin	Uppsala University	(opponent)

### *Comité de lecture*

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	

*Organisateur de conférences*

2022	New Trends in Non-Perturbative Gauge/String Theory and Integrability, France (chair)
2018	Recent Developments in Gauge Theory and String Theory, Japan (chair)
2018	Avenues of Quantum Field Theory in Curved Spacetime, Japan
2017	Topological Science Workshop 2017, Japan
2016	New Developments of Kondo Effect in Nuclear Physics, Japan (chair)
2016	Topological Materials Science: Intensive-Interactive Meeting, Japan
2016	Topological Science Kick-off Symposium 2016, Japan
2015	Workshop on Topological String and Related Topics, Japan (chair)
2013	Exotic geometry and its applications, Japan (chair)

*Projets et programmes d'échanges*

2022	NTU-BFT Scholar Mobility Grant [avec NTU, Taiwan]
2022	France–Romania–Hungary Research Network [avec Université Loránd-Eötvös, Hongrie]
2020	Programme Procope [avec DESY, Allemagne]
2017 – 2020	Discrete Geometric Analysis for Materials Design [link]
2015 – 2020	Topological Science [link]
2015 – 2020	Topological Materials Science

*Activités pédagogiques**Direction de thèses*

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

*Mentor de chercheurs postdoctoraux*

2021 – 2023	Vladimiro Benedetti	IMB/UBFC	(avec D. Faenzi (IMB))
2019 – 2021	Ali Zahabi	IMB/UBFC	
2016 – 2018	Sho Ozaki	Keio Univ.	

*Encadrement des étudiants de master*

2023 – 2024	Thomas Guerandel (M2), Yash Kumar (M2), Xavier Navand (M1), Arnaud Péniisson (stage), 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 Provcic (stage) Sankarshan Sahu (stage), Ishan Singh (stage), Giovanni 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)

*Enseignement***Enseignements à l'université de Bourgogne**

2023 – 2024	Math3B (L2 algèbre) TD, 1er semestre LMo5E (L3 alg. lin. et bilin.) TD, 1er semestre Mathématiques Appliquées (L2 ST) CM & TD, 1er semestre Math2B (L1) TD, 2ème semestre MaIE4A (L2) TD, 2ème semestre Quantum Field Theory (M2 Math4Phys) CM & TD, 2ème semestre
2022 – 2023	Math3B (L2 algèbre) TD, 1er semestre LMo5E (L3 alg. lin. et bilin.) TD, 1er semestre Mathématiques Appliquées (L2 ST) CM & TD, 1er semestre MaIE4A (L2) TD, 2ème semestre Quantum Field Theory (M2 Math4Phys) CM & TD, 2ème semestre
2021 – 2022	Mathématiques Appliquées (L2 ST) CM & TD, 1er semestre Quantum Field Theory (M2 Math4Phys) CM & TD, 2ème semestre
2020 – 2021	Quantum Field Theory (M2 Math4Phys) CM & TD, 2ème semestre
2019 – 2020	Random Matrix Theory (M1 & M2 Math4Phys) mini-cours, 2ème semestre

**Enseignements hors de France**

2019	Physique avancée (Master) : Théorie des matrices aléatoires Department of Physics, Chuo University, Japon
2015 – 2019	Physique de base (L1 & L2) : Mécanique classique, Mécanique des vagues, Électromagnétisme, Mécanique quantique Faculty of Business & Commerce/Economics/Law/Letters/Pharmacy, Keio University, Japon

## Liste de publications

<b>A</b>	<b>Liste de publications</b>	<b>6</b>
<b>B</b>	<b>Actes de conférences à comité de lecture</b>	<b>12</b>
<b>C</b>	<b>Ouvrages et chapitres d'ouvrages</b>	<b>13</b>
<b>D</b>	<b>Articles de revue</b>	<b>14</b>
<b>E</b>	<b>Exposés</b>	<b>14</b>
<b>F</b>	<b>Bourses de recherche</b>	<b>27</b>
<b>G</b>	<b>Conférences organisées</b>	<b>28</b>

---

## A Liste de publications

### A.1 Publications dans les revues à comité de lecture

1. B. Filoche, S. Hohenegger, and T. Kimura,  
 “Non-perturbative Symmetries of Little Strings and Affine Quiver Algebras,”  
*JHEP* **2402** (2024) 233 [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* **2209** (2022) 163 [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  $S^2 \times \mathbb{R}_c^2$  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  $\Omega$ -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.* **D86** (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,  
“ $\beta$ -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.* **D83** (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 Preprints

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 Actes de conférences à comité de lecture

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 Ouvrages et chapitres d’ouvrages

### *Ouvrages*

81. T. Kimura,  
 “Instanton Counting, Quantum Geometry and Algebra”,  
 Springer Int. Pub., 2021, 285 pages, ISBN: 978-3-030-76190-5.
82. T. Kimura,,  
 “Physique Mathématique de Matrices Aléatoires” (en japonais)  
 Morikita Publishing, 2021, 384 pages, ISBN: 978-4-627-06301-3.

### *Chapitres d’ouvrages*

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 Articles de revue

85. T. Kimura,  
 “Aspects of Supergroup Gauge Theory,”  
 Invited Review, *Int. J. Mod. Phys. A* **38** (2023) 2330001 [arXiv:2301.05927]
86. T. Kimura,  
 “Quiver gauge theory and quiver  $W$ -algebra,”  
 Prepared for MSJ Spring Meeting 2018
87. T. Kimura,  
 “Quantum Field Theory, Quantum Geometry, and Quantum Algebras,”  
*Suurikagaku* **653** (2017) 56–63 [arXiv:1705.05099].
88. B. Eynard, T. Kimura, and S. Ribault,  
 “Random Matrices,”  
 Lecture series in IPHT, CEA Saclay, 2015 [arXiv:1510.04430].

## E Exposés

### E.1 *Exposés invités*

89. The 16th MSJ-SI: Elliptic Integrable Systems, Representation Theory and Hypergeometric Functions  
 Engineering  $W$ -algebras from gauge origami  
 Aug 2023, Tokyo, Japan
90. XIII Workshop on Geometric Correspondences of Gauge Theories  
 More on geometric representation theory and  $qq$ -character  
 Jun 2023, Trieste, Italy
91. New Frontiers in Integrability  
 Bethe/Gauge correspondence and supergroup  
 Jun 2023, Dublin, Ireland
92. French Strings Meeting 2023  
 Branes and vertex operators in eight dimensions  
 May 2023, Annecy, France
93. Invitation to Recursion, Resurgence, and Combinatorics  
 Instanton counting and  $q$ -deformation of Virasoro/ $W$ -constraint  
 Apr 2023, Onna-son, Japan
94. The 1st SUIAS workshop in HEP: Supersymmetry and Gravitation  
 BPS/CFT in 8d  
 Aug 2022, Suzhou, China (online)

95. Rigorous Statistical Mechanics and Related Topics  
Universal multi-critical fluctuation of random partition  
Nov 2021, Kyoto, Japan (online)
96. The 21st International Conference on Discrete Geometric Analysis for Materials Design  
Non-Hermitian system, Band flattening, and Overlap fermion  
Sep 2021, Nagoya, Japan (online)
97. 76th JPS annual meeting  
Kondo effect and Conformal field theory  
Mar 2021, Tokyo, Japan (online)
98. Journée de l'équipe GADT  
Integrating over quiver variety and BPS/CFT correspondence  
Jan 2020, Dijon, France
99. Colloque de l'Institut de Mathématiques de Bourgogne  
Quantum infinite symmetry from quantum gauge theory  
Dec 2019, Dijon, France
100. BPS/CFT Correspondence  
Free field realization in BPS/CFT  
Sep 2019, Marseille, France
101. Strings, Branes and Gauge Theories  
Super instanton counting and localization  
Jul 2019, Pohang, Korea
102. Representation theory, gauge theory and integrable systems  
Geometry of quiver W-algebra  
Feb 2019, Kashiwa, Japan
103. Spectra of Random Operators and Related Topics  
A super random partition model  
Jan 2019, Kyoto, Japan
104. Noncommutative geometry and Mathematical Physics 2018  
Introduction to W-algebras  
Nov 2018, Yokohama, Japan
105. Geometric Correspondences of Gauge Theories  
Quantum algebras from quiver gauge theory  
Aug 2018, Vienna, Austria
106. Progress in the Mathematics of Topological States of Matter

- Topological order is higher-form SSB  
Aug 2018, Sendai, Japan
107. 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
108. 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
109. Localization Techniques in Quantum Field Theories  
Fractional quiver gauge theory  
Feb 2018, Stony Brook, USA
110. Topological Science Workshop 2017  
Boundary condition analysis of topological materials  
Feb 2017, Yokohama, Japan
111. Kickoff Symposium: New development of algebraic geometry viewed from theoretical physics  
From Seiberg-Witten curve to quiver W-algebras  
Feb 2017, Kyoto, Japan
112. Topological Science Kick-off Symposium 2016  
Topological insulator and lattice fermion  
Mar 2016, Yokohama, Japan
113. 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
114. 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
115. 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
116. 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



117. Spectra of Random Operators and Related Topics  
 Matrix integral and representation theory: a physical point of view  
 Dec 2015, Yokohama, Japan
118. 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
119. 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
120. 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
121. 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 *Exposés dans conférences*

122. East Asia Joint Workshop on Fields and Strings 2017  
 Double quantization of Seiberg–Witten geometry and quiver W-algebras  
 Nov 2017, Tsukuba, Japan
123. Strings and Fields 2017  
 Non-simply-laced quiver gauge theory from Omega-background  
 Aug 2017, Kyoto, Japan
124. 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
125. Developments in String Theory and Quantum Field Theory 2015  
 Band spectrum as D-brane shape  
 Nov 2015, Kyoto, Japan
126. The 33th International Symposium on Lattice Field Theory (LATTICE 2015)  
 Domain-wall, overlap, and topological insulators  
 Jul 2015, Kobe, Japan
127. The 6th Bethe Center Workshop: Topological Strings and Applications  
 Towards  $U(N|M)$  knot invariant from ABJM theory

Sep 2014, Bonn, Germany

128. Field Theory and String Theory 2013  
Topological vertex for Type IIA string on  $\mathbb{C}^2/\mathbb{Z}_k \times \text{CY}_3$   
Aug 2013, Kyoto, Japan
129. The 25th IUPAP International Conference on Statistical Physics (STATPHYS 25)  
Scaling behavior of Euler products and random matrix theory  
Jul 2013, Seoul, Korea
130. Emergent Quantum Phases in Condensed Matter  
Spin transport via gauge/gravity duality  
Jun 2013, Kashiwa, Japan
131. Field Theory and String Theory 2012  
Vortex counting from field theory  
Jul 2012, Kyoto, Japan
132. International Conference on Topological Quantum Phenomena  
Spinless basis for spin-singlet FQH states  
May 2012, Nagoya, Japan
133. The 30th International Symposium on Lattice Field Theory (LATTICE 2012)  
QCD Phase Diagram with 2-flavor Lattice Fermion Formulations  
Jun 2012, Cairns, Australia
134. Infinite Analysis 2011  
Instanton counting on ALE spaces and root of unity limit of q-Nekrasov function  
Jul 2011, Tokyo, Japan
135. 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
136. International Workshop on Statistical Physics of Quantum Systems  
Hall and spin Hall viscosity ratio in topological insulators  
Aug 2010, Tokyo, Japan

### E.3 Exposés dans conférences de JPS / MSJ

137. Quantum curve for supermatrix model and Hirota differential equations / 超行列模型の量子スペクトル曲線と広田型微分方程式  
Sep 2020, Kumamoto, Japan
138. 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
139. 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
140. Topological edge state and boundary condition / トポロジカル端状態と境界条件  
Sep 2016, Kanazawa, Japan
141. 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
142. 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
143. 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
144. 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
145. 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
146. 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
147. 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
148. 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
149. 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

150. 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

151. 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

152. 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 Séminaires

153. ICTP-Physics Latam MATH and HEP Seminar

Quantum Geometric and algebraic aspects of supersymmetric gauge theory

Oct-Nov 2023, Online,

154. Titech, Particle theory group seminar

Quantization and Integrability in Supergroup Theory

May 2023, Tokyo, Japan (online)

155. LMNO séminaire d'algèbre et de géométrie

Irréductibilité de qq-caractère et géométrie

Mar 2023, Caen, France

156. Institut Fourier séminaire algèbre et géométries

Variétés de carquois et qq-caractère

Mar 2023, Grenoble, France

157. IMT Séminaire de Probabilités

Limite multicritique de partitions aléatoires : bord et cuspidé

Feb 2023, Toulouse, France

158. Bielefeld–Melbourne Random Matrices Seminar

Multicritical edge/cusp scaling limit in random partitions

Nov 2022, online,

159. Séminaire Groupes, Représentations et Géométrie

Variétés de carquois et qq-caractère

Oct 2022, Paris, France

160. ReNewQuantum seminar

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

161. Institut Denis Poisson, Séminaire de Physique Théorique  
Théorie de jauge de supergroupe: instantons, localisation et défauts  
Dec 2021, Tours, France
162. LAREMA séminaire de géométrie algébrique  
Variété de carquois et quantification de l' espace des modules  
Nov 2021, Angers, France
163. Berkeley String-Math Seminar  
Aspects of supergroup gauge theory  
May 2021, Berkeley, USA (online)
164. Séminaire du Laboratoire de Mathématiques de Reims  
Quantification de l'espace de modules et  $W$ -algèbre de carquois  
Apr 2021, Reims, France (online)
165. Université Claude Bernard Lyon 1 ICJ Séminaire Physique Mathématique  
Refined Sato–Tate conjecture  
Jan 2021, Lyon, France (online)
166. DESY Theory Group String Theory Journal Club  
Yet another affinization of geometric Langlands correspondence  
Feb 2020, Hamburg, Germany
167. Keio University Topological Science Seminar  
Instanton counting and infinite symmetry  
Aug 2019, Yokohama, Japan
168. Meijigakuin University, Institute of Physics Seminar  
Super instanton counting and localization  
Jul 2019, Yokohama, Japan
169. Department of Physics, Chuo University  
Random matrices and mathematical physics  
Jul 2019, Tokyo, Japan
170. RIKEN iTHEMS-STAMP Seminar  
Kondo effect and Conformal Field Theory  
Jul 2019, Wako, Japan
171. Nagoya University, Math. Phys. seminar  
Super instanton counting and localization

Jul 2019, Nagoya, Japan

172. Kyoto University Particle Physics Group seminar  
Instantons in supergroup gauge theory  
Jun 2019, Kyoto, Japan
173. Tokyo Metropolitan University Geometry seminar  
Super instanton counting and localization  
May 2019, Hachioji, Japan
174. Titech, Particle theory group seminar  
Super instanton counting and localization  
May 2019, Tokyo, Japan
175. Institut de Mathématiques de Bourgogne, Séminaire de mathématique-physique  
Quiver gauge theory and quiver  $W$ -algebras  
Mar 2019, Dijon, France
176. University of Tokyo, MS seminar  
Random matrices and integrability  
Jan 2019, Tokyo, Japan
177. Chuo University, Statistical mechanics and probability seminar  
Elliptic analog of random partition model and elliptic  $W$ -algebras  
Dec 2018, Tokyo, Japan
178. Kavli IPMU, University of Tokyo, MS seminar  
Super-instanton counting  
Sep 2018, Kashiwa, Japan
179. Keio University, Dept. Phys. Seminar  
Topological Materials –Revisiting Boundary Conditions–  
Jul 2018, Yokohama, Japan
180. KIAS, String Theory seminar  
Double quantization of Seiberg-Witten geometry and quiver  $W$ -algebras (Part I & II)  
Mar 2018, Seoul, Korea
181. Perimeter Institute, Math Phys seminar  
Quantum integrability,  $W$ -algebra from quiver gauge theory  
Feb 2018, Waterloo, Canada
182. Rikkyo University Math Phys seminar  
Double quantization of Seiberg–Witten geometry and quiver  $W$ -algebras

Oct 2017, Tokyo, Japan

183. National Taiwan University, String theory group seminar  
 4d  $\mathcal{N} = 2$  index from 6d  
 Oct 2017, Taipei, Taiwan
184. University of Warsaw String theory Journal club  
 Double quantization of Seiberg-Witten geometry and quiver W-algebras  
 Sep 2017, Warsaw, Poland
185. NUS string theory group seminar  
 Double quantization of Seiberg-Witten geometry and quiver W-algebras  
 Aug 2017, Singapore, Singapore
186. IBS Fields, Gravity & Strings seminar  
 Elliptic vertex operator and topological string amplitude  
 Aug 2017, Seoul, Korea
187. 成蹊大学物理理論セミナー / Seikei University Theoretical Physics Seminar  
 Seiberg-Witten 曲線の2重量子化と箭W代数  
 Jun 2017, Tokyo, Japan
188. IBS Fields, Gravity & Strings seminar  
 Refined geometric transision and  $qq$ -characters  
 May 2017, Seoul, Korea
189. Titech, Particle theory group seminar  
 Boundary conditions of topological materials and edge-of-edge state  
 Apr 2017, Tokyo, Japan
190. Titech, Stat mech group seminar  
 Determinant structure and integrability in random matrix theory  
 Mar 2017, Tokyo, Japan
191. IBS Fields, Gravity & Strings seminar  
 Lectures on quantization of Seiberg-Witten geometry and quiver W-algebras  
 Mar 2017, Seoul, Korea
192. Fudan University, Center for Field Theory and Particle Physics seminar  
 Quantization of Seiberg-Witten geometry and quiver W-algebras  
 Mar 2017, Shanghai, China
193. Fudan University, Center for Field Theory and Particle Physics seminar  
 Boundary Conditions of Topological Insulators and Weyl Semimetals

Mar 2017, Shanghai, China

194. IBS Fields, Gravity & Strings seminar

Lectures on matrix model approach to  $\mathcal{N} = 2$  gauge theories

Feb 2017, Seoul, Korea

195. 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

196. 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

197. 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

198. Imperial College London, String theory group seminar

Elliptic deformation of  $W$ -algebras from 6d quiver gauge theory

Nov 2016, London, United Kingdom

199. National Taiwan University, String theory group seminar

Quiver  $W$ -algebras

Oct 2016, Taipei, Taiwan

200. 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

201. 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

202. 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

203. 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

204. 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

205. 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
206. 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
207. 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
208. 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
209. 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
210. Séminaire de Laboratoire de Physique Théorique d'Orsay  
Introduction to ABJM theory  
Jan 2015, Orsay, France
211. Crete Center for Theoretical Physics, HEP Seminar  
FQH/CFT and its deformation  
Nov 2014, Heraklion, Greece
212. Academy of Sciences of the Czech Republic, Institute of Physics Seminar  
Wilson loop as a source in matrix model  
Oct 2014, Prague, Czech Republic
213. 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
214. 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
215. 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
216. 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
217. 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
218. 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
219. 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
220. 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
221. 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
222. 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:  $\beta$ -deformation and orbifolding  
Jun 2012, Tokyo, Japan
223. 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
224. 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
225. 名古屋大学数理物理・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

226. 数理物理・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
227. 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
228. 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
229. 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
230. 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 Bourses de recherche

231. EUR-EIPHI, BFC-Region  
Role: Co-PI  
Title: SupToPhAG [link]  
Period: Sep 2021 – Aug 2024
232. 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€
233. Keio Gijuku Academic Development Funds  
Role: PI  
Title: Quantum Algebraic Structure in Gauge Theory  
Period: Apr 2018 – Mar 2019  
Amount: 300k JPY
234. 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

235. Keio Gijuku Academic Development Funds

Role: PI  
Title: Duality in quantum field theory and its applications  
Period: Apr 2016 – Mar 2018  
Amount: 800k JPY

236. 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

237. 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

238. 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 Conférences organisées

239. 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/>

240. 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](http://user.keio.ac.jp/~k_tar/WS/WS2018.html)

241. Avenues of Quantum Field Theory in Curved Spacetime

Date: Jul 2018  
Place: Keio University, Yokohama

URL: [http://user.keio.ac.jp/~flachi\\_nino/](http://user.keio.ac.jp/~flachi_nino/)

242. Topological Science Workshop 2017

Date: Feb 2017

Place: Keio University, Yokohama

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

243. 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](http://user.keio.ac.jp/~k_tar/WS/NK2016.html)

244. Topological Materials Science: Intensive-Interactive Meeting

Date: Nov 2016

Place: Keio University, Yokohama

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

245. Topological Science Kick-off Symposium 2016

Date: Mar 2016

Place: Keio University, Yokohama

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

246. 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](http://user.keio.ac.jp/~k_tar/WS/TS2015.html)

247. Exotic geometry and its applications

Date: Feb 2013

Place: RIKEN, Wako

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