

平成 29 年度 教員・数学研究所特任教員の業績  
(論文と口頭発表)

(秋吉 宏尚)

• 論文・著書

[1] Hirotaka AKiyoshi, Ford domains of geometrically infinite punctured torus groups, プレプリント (投稿済) .

[2] Collapsing hyperbolic torus with a single cone point, プレプリント.

[3] Ford domain for a cone manifold, プレプリント.

• 口頭発表

[1] Finiteness of Ford and Dirichlet domains for 3-dimensional cone hyperbolic manifolds, 研究集会「拡大 KOOK セミナー2017」, 大阪工業大学, 2017年8月28日.

[2] 3次元錐双曲多様体のフォード領域とディリクレ領域に関する実験, 研究集会「トポロジーとコンピュータ 2017」, 大阪大学, 2017年10月21日.

[3] Thin representations for the one-cone torus group, The 2nd Pan-Pacific International Conference on Topology and Applications, 釜山 (韓国), 2017年11月13日.

[4] 3次元錐双曲多様体の Ford/Dirichlet 領域について, 研究集会「錐多様体と基本領域」, 大阪市立大学, 2018年1月25日.

(糸山 浩)

• 学術論文

[1] H. Itoyama, A. Mironov, A.

Morozov “Cut and join operator ring in Aristotelian tensor model”  
arXiv:1710.10027 [hep-th]

[2] H. Itoyama, T. Oota, R.

Yoshioka “Elliptic algebra, Frenkel- Kac construction and root of unity limit” J.Phys. A50 (2017) no.36, 365401

[3] H. Itoyama, A. Mironov, A.

Morozov “Ward identities and combinatorics of rainbow tensor models” JHEP 1706 (2017) 115

[4] H. Itoyama, A. Mironov, A.

Morozov “Rainbow tensor model with enhanced symmetry and extreme melonic dominance” Phys.Lett. B771 (2017) 180-188

• 著書

糸山 浩司 “波動と場の物理学入門” (京都大学学術出版会、2017年)

• 口頭発表

国内

[1] H. Itoyama, “Cut & Join operator ring in Aristotelian tensor model” , Seminar delivered at Yukawa institute of theoretical physics, November 10, 2017,

[2] H. Itoyama, “Cut & Join operator ring in Aristotelian tensor model” , talk

given at annual JPS meeting, March 22, 2018.

[3] H. Itoyama, “Multi-Penner 型行列模型と拡大有効プレポテンシャル” talk given by K. Yano at annual JPS meeting, March 22, 2018.

## 国際

[1] H.Itoyama, “Extreme Melonic dominance in rainbow tensor model” , seminar delivered at Lebedev institute, Moscow, June 6, 2017

[2] H.Itoyama, “Combinatorial structure of rainbow tensor model” , talk delivered at the workshop “duality, integrability and matrix model” , Lebedev institute, Moscow, August 25, 2017.

[3] H.Itoyama, “Cut & Join operator ring in Aristotelian tensor model” , talk given at East Asian symposium on quantum field theory and string theory, KEK, November 14, 2017.

## (大仁田 義裕)

### • 論文, 著書, 編集

[1] Y. Ohnita: On Floer homology of the Gauss images of isoparametric hypersurfaces, In: “Hermitian-Grassmannian Submanifolds” , Daegu, Korea, July 2016, Editors: Y.-J.Suh, Y.Ohnita, J.Zhou and B.-H.Kim and H.-J.Lee, Springer Proceedings in Mathematics & Statistics 203, pp.235-247, Springer, 2017.

[2] Y. Ohnita: On classification of minimal orbits of the Hermann action satisfying Koike’s conditions (Joint work with Minoru Yoshida), to appear in: Proceedings of The 21st International Workshop on Hermitian Symmetric Spaces and Submanifolds 21(2017).

[3] “Hermitian-Grassmannian Submanifolds”, Daegu, Korea, July 2016. Editors: Young Jin Suh, Yoshihiro Ohnita, Jiazuo Zhou, Byung Hak Kim, Hyunjin Lee, Springer Proceedings in Mathematics and Statistics 203, ISSN 2194-1009 ISSN 2194-1017(electronic), ISBN 978-981-10-5555-3 ISBN 978-981-10-5556-0 (eBook), DOI 10.1007/978-981-10-5556-0

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[1] Classification of minimal orbits of the Hermann action satisfying Koike’s conditions , The 21st International Workshop on Hermitian Symmetric Spaces and Submanifolds & The 14th RIRCM-OCAMI Joint Differential Geometry Workshop, Kyungpook National University, Daegu, Korea, October 11 (Wed)-13 (Fri), 2017, 2017年10月13日.

[2] Classification of minimal orbits of the Hermann action satisfying Koike’s conditions , 福岡大学微分幾何研究集会, 福岡大学セミナーハウス, 2017年11月3日(金) - 11月6日(月), 2017年11月4日.

[3] 小池の条件を満たす Hermann 作用の軌道の分類について, 部分多様体論・湯沢 2017, 新潟県湯沢町・湯沢グランドホテル, 2017年11月30日(木) - 12月2日(土), 2017年12月1日.

[4] Approach from hypersurface geometry to the Floer theory on Lagrangian

intersections, I(R.Miyaoka), II(Y.Ohnita). “Differential Geometry and Differential Equations: the influence of Mirror Symmetry and Physics”, 早稲田大学西早稲田キャンパス, December 11 (Mon)-15 (Fri), 2017, 2017年12月13日(宮岡), 14日(大仁田).

[5] Symmetry and moduli for harmonic maps (a provisional title of the intended talk), 国際研究集会 “Geometry of Submanifolds and Integrable Systems”, The 15th OCAMI-RIRCM Joint Differential Geometry Workshop & The 3rd OCAMI-KOBE-WASEDA Joint International Workshop on Differential Geometry and Integrable Systems (2018.3.26-3.30) 大阪市立大学, 2018年3月30日.

(尾角 正人)

• 論文・著書

[1] M. Okado, R. Sakamoto, A. Schilling and T. Scrimshaw, Type  $D^{\{1\}}_n$  rigged configuration bijection, J. Algebr. Comb. 46 (2017) 341-401.

[2] A. Kuniba, M. Okado and S. Watanabe, Integrable structure of multi-species zero range process, SIGMA 13 (2017), 044, 29 pages.

[3] 中村佳正・高崎金久・辻本諭・尾角正人・井ノ口順一著、「解析学百科II 可積分系の数理」、朝倉書店(第3章担当)

• 口頭発表

[1] 箱玉系再訪、研究集会「可積分系の数理と応用」、2017年9月4日-6日、京都大学数理解析研究所

[2] Generalized quantum groups and fusion procedure, MATRIX program “Non-Equilibrium Systems and Special Functions”, January 8-February 2 2018, Melbourne University Creswick Campus, Australia

[3] アフィン非例外型のパスと艦装位配の全単射、日本数学会2018年度年会 無限可積分系セッション一般講演、2018年3月18日-21日、東京大学

(加藤 信)

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[1] minimal immersions of bicomplex domains, 北九州幾何学研究集会 2017, 九州工業大学戸畑キャンパス, 2017年7月8日.

[2] 双複素極小はめ込みとその応用, 淡路島幾何学研究集会 2018, 南あわじ市阿那賀地区公民館, 2018年1月28日.

[3] 平均曲率0曲面の双複素拡張, 2018名城幾何学研究集会「種々の計量と幾何構造」, 名城大学理工学部, 2018年3月7日.

(兼田 正治)

• 雑誌・論文

[1] Abe, N. and Kaneda, M., The Loewy structure of  $SL_2$ -Verma modules of singular highest weights, JIM Jussieux, Volume 16/Issue 4/September 2017, pp. 887 - 898

• 口頭発表

[1] Frobenius contraction, a new operation on the rational modules for reductive algebraic groups in positive characteristic, Atlantic Algebra Center, Canada, 2017/8/28

[2] Williamson's construction of torsion in the intersection cohomology of Schubert varieties, Toric Topology 2017 in Osaka/大阪市立大学代数 seminar, 大阪市立大学, 2017/12/14

(金信 泰造)

• 論文・著書

[1] Kanenobu, T. and Komatsu, S., Enumeration of ribbon 2-knots presented by virtual arcs with up to four crossings, J. Knot Theory Ramifications vol. 26, No. 8 (2017) 1750042, 41.

[2] Kanenobu, T. and Sumi, T., Classification of a family of ribbon 2-knots with trivial Alexander polynomial, Communications of the Korean Mathematical Society. (to appear).

[3] Kanenobu, T. and Moriuchi, H., Coherent band-Gordian distances between knots and links with up to seven crossings, preprint.

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[1] Classification of Ribbon 2-Knots, 2017 年 6 月 16 日, "Self-distributive system and quandle (co)homology theory in algebra and low-dimensional topology", 2017 KIAS Research Station Busan, Korea.

[2] 自明なアレキサンダー多項式をもつ 2 次元リボン結び目のある無限族の分類, 2017 年 8 月 28 日, 研究集会「拡大 KOOK セミナー 2017」, 大阪工業大学大宮キャンパス.

[3] Coherent band-Gordian distances between knots and links, 2017 年 10 月 27 日, Friday Seminar on Knot Theory, 大阪市立大学.

[4] Coherent band-Gordian distances between knots and links with up to seven crossings, 2017 年 11 月 16 日, The 2nd Pan Pacific International Conference on Topology and Applications, Novotel Ambassador Busan, Korea.

[5] Classification of a family of ribbon 2-knots with trivial Alexander polynomial, 2018 年 1 月 30 日, The 13th East Asian School of Knots and Related Topics, KAIST, Daejeon, Korea.

(鎌田 聖一)

• 論文・著書・編集

[1] Seiichi Kamada, Surface-Knots in 4-Space, Springer Monographs in Mathematics, Springer, 2017/04/07 発行, 212 ページ.(著書)

- [2] Hisaaki Endo and Seiichi Kamada, Counting Dirac braid relator and hyperelliptic Lefschetz fibrations, *Trans. London Math. Soc.* 4 (2017), no. 1, 72–99.  
(arXiv:1508.07687)
- [3] Seiichi Kamada and Takao Matumoto, Chart descriptions of regular braided surfaces, *Topology Appl.* 230 (2017), 218–232.
- [4] Seiichi Kamada and Kengo Kawamura, Ribbon-clasp surface-links and normal forms of immersed surface-links, *Topology Appl.* 230 (2017), 181–193.  
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- [5] K. Kaur, S. Kamada, A. Kawauchi, M. Prabhakar, Gauss diagrams, unknotting numbers and trivializing numbers of spatial graphs, *Topology Appl.* 230 (2017), 586–598.
- [6] Yewon Joung, Seiichi Kamada, Akio Kawauchi and Sang Youl Lee, Polynomial of an oriented surface-link diagram via quantum  $A_2$  invariant, *Topology Appl.* 231 (2017) 159–185. (arXiv: 1602.01558v1)
- [7] Atsushi Ishii, Masahide Iwakiri, Seiichi Kamada, Jieon Kim, Shosaku Matsuzaki and Kanako Oshiro, A multiple conjugation biquandle and handlebody-links, *Hiroshima Mathematical Journal*, 出版受理.  
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- [8] K. Kaur, S. Kamada, A. Kawauchi, M. Prabhakar, An unknotting index for virtual knots, *Tokyo J. Math.*, 出版受理. (arXiv:1709.00817)
- [9] Seiichi Kamada, Akio Kawauchi, Jieon Kim and Sang Youl Lee, Presentation of immersed surface-links by marked graph diagrams, preprint,  
arXiv:1707.04688v1.
- [10] Seiichi Kamada, Akio Kawauchi, Jieon Kim and Sang Youl Lee, Biquandle cohomology and state-sum invariants of links and surface-links, preprint,  
arXiv:1803:03137.
- [11] Atsushi Ishii, Masahide Iwakiri, Seiichi Kamada, Jieon Kim, Shosaku Matsuzaki and Kanako Oshiro, Biquandle (co)homology and handlebody-links, preprint,  
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- [12] Andrew Bartholomew, Roger Fenn, Naoko Kamada and Seiichi Kamada, On Gauss codes of virtual doodles, preprint.

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- [1] S. Kamada, Doodles on surfaces, 国際研究集会「Self-distributive system and quandle (co)homology theory in algebra and low-dimensional topology」, Kolon Seacloud Hotel, 釜山, 韓国, 招待講演, 2017年6月12–16日(講演6月12日).
- [2] A. Bartholomew, R. Fenn, N. Kamada, S. Kamada (発表者), Doodles on surfaces, 国際研究集会「The 4th Russian-Chinese Conference on Knot Theory and Related Topics」, Bauman Moscow State Technical University, Moscow, Russia, 招待講演, 2017年7月3日–7日(講演7月4日).
- [3] 鎌田 聖一, 仮想交点を許した doodle とその表示, N-KOOK セミナー, 大阪市立大学文化交流センター, 招待講演, 2017年11月11日.

[4] S. Kamada, Isotopic deformations of immersed surfaces in 4-space and their braid presentations, 国際会議「The 2nd Pan Pacific Topology Conference on Topology and Applications」, BEXCO Convention Hall, Busan, Korea, 招待講演, 2017年11月13日-17日(講演11月13日).

[5] A. Bartholomew, R. Fenn, N. Kamada, S. Kamada (発表者), Doodles on surfaces, virtual diagrams on the plane, and commutator identities, 国際会議「The 7th East Asian Conference on Algebraic Topology」, IISER Mohali, Mohadi, India, 招待講演, 2017年12月1日-5日(講演12月1日).

[6] S. Kamada, Multiplication of surface-links, 国際会議「The 13th East Asian School of Knots and Related Topics」, KAIST Daejeon, Korea, 招待講演, 2018年1月29日-2月1日(講演2月1日).

[7] S. Kamada, On embedded/immersed surfaces in 4-space, their braid presentations and multiplications, 国際研究集会「Knotted Embeddings in Dimensions 3 and 4」, CIRM, Marseille, France, 招待講演, 2018年2月12日-16日(講演2月12日).

(小池 貴之)

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[1] G. Hosono, T. Koike, "On minimal singular metrics of line bundles whose stable base loci admit holomorphic tubular neighborhoods", to appear in Ann. Fac. Sci. Toulouse Math. (6).

[2] T. Koike, "Non-projective K3 surfaces with Levi-flat hypersurfaces", 京大数理研講究録 (to appear).

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[1] Non-projective K3 surfaces containing Levi-flat hypersurfaces, Constant Scalar Curvature Metrics in Kahler and Sasaki Geometry, Centre International de Rencontres Mathematiques,

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[2] 複素近傍の分類理論と Levi 葉層 (小川竜氏との共同講演), 接触構造, 特異点, 微分方程式及びその周辺,

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[3] Several complex variables on a neighborhood of a complex submanifold and its application to complex geometry, 談話会, 大阪市立大学, 大阪府大阪市, 2018年2月7日.

[4] 数値的半正な正則直線束のエルミート計量と部分多様体の近傍, 日本数学会春季総合分科会, 東京大学, 東京都目黒区, 2018年3月19日.

(佐野 昂迪)

• 論文

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[2] D. Burns, M. Kurihara, T. Sano, On Stark elements of arbitrary weight and their

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[2] Euler 系の理論の最近の発展について, 第62回代数学シンポジウム, 大阪大学, 2017年9月6日.

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(高橋 太)

• 論文

[1] Scale invariance structures of the critical and the subcritical Hardy inequalities and their improvements, (with M. Sano)

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[2] Some improvements for a class of the Caffarelli-Kohn-Nirenberg inequalities, (with M. Sano) Differential and Integral Equations, {¥bf 31}, no.1-2, (2018), 57--74.

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「Critical and subcritical fractional Trudinger-Moser type inequalities on  $\mathbb{R}^n$ 」

(2017年9月5日)

[2] Università degli Studi di Napoli Federico II, Analysis Seminar 講演

「Critical and subcritical fractional Trudinger-Moser type inequalities on  $\mathbb{R}^n$ 」

(2017年9月28日)

[3] 北海道大学「偏微分方程式セミナー」講演

「Critical and subcritical fractional Trudinger-Moser type inequalities on  $\mathbb{R}^n$ 」

(2017年10月20日)

[4] 第 152 回「神楽坂解析セミナー」（東京理科大学）講演

「Critical and subcritical fractional Trudinger-Moser type inequalities on  $\mathbb{R}^n$ 」

（2017 年 11 月 25 日）

[5] 第 7 回北海道-東北コンソーシアムセミナー・

函館における偏微分方程式集中ワークショップ（公立ほこだて未来大学）講演

「ABP 法に基づく等周不等式、Sobolev 不等式の証明：サーベイと応用」

（2017 年 12 月 1 日）

[6] 広島大学「HMA セミナー・冬の研究会」講演

「重み付き全空間型 Trudinger-Moser 不等式と関連する最大化問題」

（2018 年 1 月 19 日）

[7] 第 8 回北海道-東北コンソーシアムセミナー・

弘前における偏微分方程式集中ワークショップ（弘前大学）講演

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(竹内 敦司)

• 論文

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Integration by parts formulas for conditional intensities of marked Hawkes processes,

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[2] A. Takeuchi:

Remark on convergence rate of generalized extreme value distributions via integration by parts formulas,

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[4] A. Takeuchi and H. Tsukada:

Remark on pathwise uniqueness of stochastic differential equations driven by Lévy processes, submitted.

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[1] Malliavin calculus for stochastic functional differential equations,

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2017 年 4 月 22 日,

大阪市立大学.

[2] Delayed financial models,



OCU Monday Seminar on Probability and Statistics,

2017年4月24日,

大阪市立大学.

[3] Integration by parts formula for marked Hawkes processes,

関西確率論セミナー,

2017年6月2日,

京都大学.

[4] Integration by parts formula for Hawkes processes,

Workshop on interactions between commutative and

non-commutative probability,

2017年7月26日,

京都大学.

[5] Integration by parts formula for marked Hawkes processes,

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2017年9月4日~9月8日,

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• 論文

[1] Invariance of the Drinfeld pairing of a quantum group.

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[2] Modules over quantized coordinate algebras and PBW-bases.

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[1] 古事記と日本書紀の暦日についての続編

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弘前大学 2017.8.26

[2] べき根における量子群の局所化

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[3] 量子座標環とその表現

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(西尾 昌治)

• 論文

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Weighted polyharmonic and polyparabolic Bergman spaces on the upper half space,

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• 論文・著書

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[2] Variation of the moduli disk for an open Riemann surface of finite  
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