

令和 2 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] H. Akiyoshi, K. Ohshika, J. Parker, M. Sakuma, H. Yoshida, "Classification of non-free Kleinian groups generated by two parabolic transformations", Trans. Amer. Math. Soc. 374 (2021), no. 3, 1765--1814.
- [2] H. Akiyoshi, "Dirichlet domains for some one-cone torus bundles", Proceedings of the 3rd Pan-Pacific International Conference on Topology and Applications from a special issue of Topology and Its Applications, 掲載決定 (2020 年 8 月 31 日) .

・口頭発表

(国内)

- [1] 錐特異点つきトーラス束のディリクレ領域について, 研究集会「拡大 KOOK セミナー2020」(オンライン開催), 2020 年 9 月 11 日.

(阿部 健)

・出版

- [1] K. Abe, The vorticity equations in a half plane with measures as initial data, Ann. Inst. H. Poincaré Anal. Non Linéaire, in press

・作成

- [2] K. Abe, Existence of vortex rings in Beltrami flows, arXiv:2008.09345

・セミナー等での口頭発表--タイトル、場所、セミナー(等)名、日程、等

- [1] K. Abe, On the large time  $L^{\infty}$ -estimates of the Stokes semigroup in two dimensional exterior domains, 12th Nagoya DE conference, Mar. 9, 2021, zoom

- [2] K. Abe, Existence of vortex rings in Beltrami flows, International Workshop on Multi-Phase Flows: Analysis, Modelling and Numerics, Waseda University, Dec. 1, 2020, zoom

- [3] K. Abe, Stability of Lamb dipoles, 45th PDE Sapporo symp., Hokkaido Univ., Aug. 17, 2020, zoom

(伊師 英之)

・論文

- [1] H. Ishi and K. Koufany "The compression semigroup of the dual Vinberg cone", 13 pages, to appear in the Proceedings of "6th Tunisian-Japanese Conference : Geometric and Harmonic Analysis on homogeneous spaces and Applications".

- [2] P. Graczyk, H. Ishi, B. Kolodziejek, and H. Massam "Model selection in the space of Gaussian models invariant by symmetry", arXiv:2004:03503, submitted.

- [3] H. Ishi and K. Oshiro "Continuous wavelet transforms for vector-valued functions", 8 pages, submitted.

- [4] H. Ishi "On Gaussian group convex models", 8 pages, submitted.

・口頭発表

### (国内)

- [1] 表現の既約分解のアルゴリズムについて, 2020 年度表現論ワークショップ, 2021.1.10.
- [2] Berezin-Wallach-Gindikin-Jorgensen 集合について, 第 16 回代数・幾何・解析セミナー, 2021.2.16.
- [3] 置換対称性をもつガウシアンモデルについて, ワークショップ「第二回 分布族と離散集合の幾何とその周辺」, 2021.3.5.

### (国際)

- [1] Cholesky structures on matrices and their applications, CIRM 研究集会 "Mathematical Methods of Modern Statistics 2", 2020.6.18.

### (糸山 浩)

#### ・学術論文

#### 学術誌 :

[1] Correspondence between Feynman diagrams and operators in quantum field theory that emerges from tensor model, N. Amburg, H. Itoyama, A. Mironov, A. Morozov, D. Vasiliev, R. Yoshioka. Eprint 1911.10574, arXiv hep-th FIAN/TD-12/19, ITEP/TH-33/19, IITP/TH-19/19, MIPT-TH-17/19, NITEP 37, OCU-PHYS 512, doi = "10.1140/epjc/s10052-020-8013-8", Eur. Phys. J. C, 80 5 471 2020

[2] Stability, enhanced gauge symmetry and suppressed cosmological constant in 9D heterotic interpolating models, Itoyama, H. and Nakajima, Sota, eprint 2003.11217, arXiv hep-th, NITEP 63, OCU-PHYS 517, doi = "10.1016/j.nuclphysb.2020.115111", Nucl. Phys. B958 115111 2020

[3] Static force potential of a non-Abelian gauge theory in a finite box in Coulomb gauge, Furukawa, Tomohiro and Ishibashi, Keiichi and Itoyama, H. and Kambayashi, Satoshi, eprint 2011.13331, arXiv hep-th, NITEP 81, OCU-PHYS 524, doi = 10.1103/PhysRevD.103.056003, Phys. Rev. D103 5 056003 2021

[4] Marginal deformations of heterotic interpolating models and exponential suppression of the cosmological constant, Itoyama, H. and Nakajima, Sota, eprint 2101.10619, arXiv hep-th, NITEP 89, OCU-PHYS 531, doi = 10.1016/j.physletb.2021.136195, Phys. Lett. B 816 136195 2021

[5] Theory space of one unitary matrix model and its critical behavior associated with Argyres-Douglas theory, Itoyama, H. and Yano, Katsuya, eprint 2103.11428, arXiv hep-th, NITEP 92, OCU-PHYS 534, 3, 2021"

#### ・口頭発表

#### 国内:

[1]糸山浩司, 大田武志, 矢野勝也, “ユニタリー行列模型の臨界点に関して”, 日本物理学会, online, 2020 年 9 月 14 日

[2]糸山浩司, 中島爽太, “Suppressed cosmological constant with enhanced gauge symmetry in heterotic interpolating models”, 日本物理学会, online, 2020 年 9 月 14 日

[3]糸山浩司, “Stability, enhanced gauge symmetry and suppressed cosmological

constant in 9D heterotic interpolating models “，素粒子現象論研究会、大阪市立大学学術情報センター, hybrid, 2020 年 11 月 28 日

[4] 古川友寛, 石橋啓一, 糸山浩司, 神林聰, “Static force potential of a non-Abelian gauge theory in a finite box in Coulomb gauge” , 日本物理学会, online, 2021 年 3 月 14 日

[5] 糸山浩司, 古賀勇一, 中島爽太, “heterotic interpolating model の有効作用による対称性の拡大” , 日本物理学会, online, 2021 年 3 月 15 日

[6] 糸山浩司 “Enhanced gauge symmetry and suppressed cosmological constant in heterotic interpolating models” 京都大学素粒子論研究室セミナー、online, 2021 年 3 月 3 日

#### 国際:

[1] H. Itoyama, “Stability, enhanced gauge symmetry and suppressed cosmological constant in 9D heterotic interpolating models ”, seminar delivered on Sept 1, 2020, online, Liverpool U., UK

#### (大仁田 義裕)

- 論文, 著書, 編集

(論文)

[1] Y. Ohnita: Parallel Kähler submanifolds and R-spaces, (submitted), a preprint, OCAMI Preprint Ser. 20-21.

[2] J.-T. Cho, K. Hashimoto and Y. Ohnita: Totally complex submanifolds and R-spaces, in preparation.

- 口頭発表

[1] J.-T. Cho, K. Hashimoto (\*) and Y. Ohnita: Higher dimensional generalization of the Chiang Lagrangian and totally complex submanifolds, OCAMI workshop on “Submanifolds of Symmetric Spaces and their Time Evolutions” (online), organized by Professor Naoyuki Koike (Faculty of Science, Tokyo University of Science), March 5-6, 2021. 2021 年 3 月 5 日. (\*) は発表者

#### (尾角 正人)

- 論文

[1] J.-H. Kwon, M. Okado,  
Higher level q-oscillator representations for  
 $\$U_q(C^{\{1\}}_n, U_q(C^{\{2\}}(n+1))\$$  and  $\$U_q(B^{\{1\}}(0,n))\$$ ,  
Communications in Mathematical Physics (2021).  
<https://doi.org/10.1007/s00220-021-04009-x>

#### (加藤 信)

- 論文

[1] K.Hamada, S.Kato:  
Nonorientable minimal surfaces with catenoidal ends,

Annali di Mathematica Pure ed Applicata (2020),  
published online.

・口頭発表

- [1] 光的直線の彼方の特異点,  
大阪市立大学微分幾何学セミナー,  
大阪市立大学 & Zoom, 2020 年 7 月 17 日.
- [2] 平均曲率 0 曲面の双複素拡張と平面型 end の正則性,  
第 67 回幾何学シンポジウム,  
Zoom, 2020 年 9 月 3 日(基調講演).

(金信 泰造)

・論文・著書

- [1] Kanenobu, T. and Sumi, T., Twisted Alexander polynomial of a ribbon 2-knot of 1-fusion, *Osaka J. Math.* Vol. 57, No. 4 (2020) 789-803.
- [2] Kanenobu, T. and Sumi, T., Suciu's ribbon 2-knots with isomorphic group, *Journal of Knot Theory and Its Ramifications* Vol. 29, No. 7, 2050053 (2020) (9 pages).
- [3] Kanenobu, T. and Matsuda, Masafumi, Presentation of a ribbon 2-knot, *Journal of Knot Theory and Its Ramifications* Vol. 29, No. 7, 2050048 (2020) (14 pages).
- [4] Kanenobu, T., Classification of ribbon 2-knots with ribbon crossing number up to four. *RIMS Kokyuroku*, Vol. 2163 (2020) 1-14.
- [5] 結び目の数学 結び目理論への初等的入門 原書改訂版, C. Adams (著), 金信泰造(訳), 丸善出版, 2021 年 1 月 27 日出版.

・口頭発表

- [1] 同型な結び目群をもつ Suciu の 2 次元リボン結び目の分類, (共同研究者:角俊雄), 2020 年 9 月 9 日, 研究集会「拡大 KOOK セミナー 2020」, 9 月 9-11 日, 大阪市立大学, オンライン. [SEP]
- [2] Classification of small ribbon 2-knots, 2020 年 5 月 13 日, 数理解析研究所研究集会『Intelligence of Low-dimensional Topology』オンライン, 13-15 May 2020.

(神田 遼)

・論文

- [1] Ryo Kanda, Extension groups between atoms in abelian categories, *J. Pure Appl. Algebra* 225 (2021), no. 9, 106669
- [2] Alex Chirvasitu, Ryo Kanda, and S. Paul Smith, Maps from Feigin and Odesskii's elliptic algebras to twisted homogeneous coordinate rings, *Forum Math. Sigma* 9 (2021), e4
- [3] Alex Chirvasitu, Ryo Kanda, and S. Paul Smith, Elliptic R-matrices and Feigin and Odesskii's elliptic algebras, arXiv:2006.12283 (プレプリント)

・口頭発表

- [1] Ryo Kanda, Feigin-Odesskii's elliptic algebras, 京都表現論セミナー,  
オンライン, 2020 年 8 月 6 日
- [2] Ryo Kanda, Extension groups between atoms in abelian categories,

(小池 貴之)

・論文

[1] T. Koike, Arnol'd's type theorem on a neighborhood of a cycle of rational curves, to appear in J. Anal. Math.

[2] T. Koike, Linearization of transition functions of a semi-positive line bundle along a certain submanifold, to appear in Ann. Inst. Fourier (Grenoble).

・口頭発表

[1] On the complement of a hypersurface with flat normal bundle which corresponds to a semipositive line bundle, 微分幾何学セミナー, 大阪市立大学, 大阪府大阪市, 2020 年 10 月.

[2] On the complement of a hypersurface with flat normal bundle which corresponds to a semipositive line bundle, Complex Geometry Seminar, オンライン, 2020 年 10 月.

[3] On the complement of a hypersurface with flat normal bundle which corresponds to a semipositive line bundle, 第 26 回複素幾何シンポジウム(金沢) 2020, オンライン, 2020 年 11 月.

[4] On the complement of a hypersurface with flat normal bundle which corresponds to a semipositive line bundle, 多変数関数論若手オンライン勉強会, オンライン, 2020 年 11 月.

[5] 半正直線束の変換関数の固定部分近傍における線形化について, 第 63 回 函数論シンポジウム, オンライン, 2020 年 11 月.

[6] Linearization of transition functions of a semi-positive line bundle along a certain submanifold, Grauert 理論と最近の複素幾何, オンライン, 2021 年 2 月.

[7] 半正直線束の変換関数の固定部分近傍における線形化について, 日本数学会年会函数論分科会, 慶應義塾大学 (オンライン), 2021 年 3 月..

(佐野 昂迪)

・論文

[1] D. Burns, M. Kurihara, T. Sano, On Stark elements of arbitrary weight and their  $p$ -adic families, Adv. Stud. Pure Math. 86 (2020) 113-140.

[2] D. Burns, A. Daoud, T. Sano, S. Seo, On Euler systems for the multiplicative group over general number fields, to appear in Publicacions Matematiques.

[3] D. Burns, T. Sano, On non-commutative Euler systems, preprint. arXiv:2004.10564

[4] D. Burns, M. Kurihara, T. Sano, On derivatives of Kato's Euler system and the Mazur-Tate Conjecture, preprint. arXiv:2103.11535

[5] D. Bullach, D. Burns, T. Sano, On  $p$ -adic families of special elements for rank-one motives, preprint.

[6] D. Burns, T. Sano, Reduced determinant functors, K-theory and zeta elements, preprint.

[7] D. Burns, T. Sano, Non-commutative refined class number formulas for  $G_m$ , preprint.

・口頭発表

[1] 同変玉河数予想について, 談話会, 京都大学, 2020年12月23日.

(砂川 秀明)

・論文

[1] Y. Nishii and H. Sunagawa, “On Agemi-type structural conditions for a system of semilinear wave equations,” Journal of Hyperbolic Differential Equations, **17**, no.3 (2020), p.459-473.

[2] Y. Nishii, H. Sunagawa and H. Terashita, “Energy decay for small solutions to semilinear wave equations with weakly dissipative structure,” to appear in J. Math. Soc. Japan. [<https://doi.org/10.2969/jmsj/84148414>]

[3] C. Li, Y. Nishii, Y. Sagawa and H. Sunagawa, “On the derivative nonlinear Schrödinger equation with weakly dissipative structure,” to appear in Journal of Evolution Equations. [<https://doi.org/10.1007/s00028-020-00634-6>]

[4] C. Li, Y. Nishii, Y. Sagawa and H. Sunagawa, “Large time asymptotics for a cubic nonlinear Schrödinger system in one space dimension,” to appear in Funkcialaj Ekvacioj. [arXiv:1905.07123]

[5] C. Li, Y. Nishii, Y. Sagawa and H. Sunagawa, “Large time asymptotics for a cubic nonlinear Schrödinger system in one space dimension, II,” to appear in Tokyo J. Math. [arXiv:2001.10682]

・口頭発表

[1] 砂川秀明 “非線形波動方程式に対する可換ベクトル場法について,” 大阪市立大学 談話会, 2020年7月8日.

[2] 砂川秀明 “Energy decay for semilinear wave equations with weakly dissipative structure,” 早稲田大学 応用解析研究会, 2020年7月11日.

(閔 行宏)

・論文発表（出版または出版決定したもの）

[1] Toshitaka Nagai, Yukihiro Seki, Tetsuya Yamada,  
Global existence of solutions to a parabolic  
attraction-repulsion chemotaxis system in  $\mathbb{R}^2$ :  
the attractive dominant case,

Nonlinear Analysis, Real World Applications, to appear.

[2] Mukai Asato and Yukihiro Seki,  
Refined construction of type II blow-up solutions for semilinear heat equations with  
Joseph--Lundgren  
supercritical nonlinearity,

Discrete Contin. Dyn. Syst., to appear.

(cf. OCAMI Preprint Series

- 2020: <http://www.sci.osaka-cu.ac.jp/OCAMI/publication/preprint/preprint.html>.  
[3] Pawe{Yl} Biernat and Yukihiro Seki,  
Transitions of blow-up mechanisms in  $k$ -equivariant harmonic map heat flow,  
Nonlinearity, 33 (2020), 2756--2796. (Published online 14 April 2020)  
(cf. OCAMI Preprint Series)
- 2019: <http://www.sci.osaka-cu.ac.jp/OCAMI/publication/preprint/preprint.html>.  
プレプリント  
[4] Toshitaka Nagai, Yukihiro Seki, Tetsuya Yamada,  
Boundedness of solutions to a parabolic attraction--repulsion  
chemotaxis system in  $\mathbb{R}^2$ : the attractive dominant case,  
submitted.  
(cf. OCAMI Preprint Series)
- 2020: <http://www.sci.osaka-cu.ac.jp/OCAMI/publication/preprint/preprint.html>.  
• 口頭発表(発表者、題目、場所、研究集会名、発表日)  
[1] 関 行宏, 調和写像流方程式に対する特異性解析 , zoom オンライン,  
RIMS 共同研究 (グループ型 A) 「非線形問題への常微分方程式の手法によるアプローチ」 ,  
2021 年 3 月 4 日.  
[1] Yukihiro Seki, Description of non-self-similar singularities in harmonic map heat  
flow, OCAMI,  
International Workshop on Geometric Evolution Equations and Related Fields,  
2021 年 3 月 9 日  
(3) 関 行宏, 非線形放物型方程式に内在する非自己相似的特異性の描写, OCAMI,  
数学研究会特別賞受賞講演会,  
2021 年 3 月 19 日  
(4) 向井 晨人、関 行宏,  
Refined construction of type II blow-up solutions for a semilinear heat equation with  
Joseph-Lundgren supercritical nonlinearity, オンライン,  
日本数学会 2020 年度秋季総合分科会,  
2020 年 9 月 22-25 日
- (高橋 太)  
• 論文  
[1] Sharp Hardy-Leray inequality for three-dimensional solenoidal fields with  
axisymmetric swirl (with N. Hamamoto)  
Communications of Pure and Applied Anal., 19, no. 6 (June, 2020), 3209--3222.  
[2] A characterization of differentiability for the best trace Sobolev constant  
function (with K. Akayama)  
RIMS Kokyuroku Bessatsu, B82 (2020), 87--101.  
[3] Finsler Hardy inequalities  
(with A. Mercaldo, M. Sano)  
Math. Nachrichten, 293, no. 12, (2020), 2370--2398.

- [4] Sharp Hardy-Leray inequality for curl-free fields with a remainder term  
 (with N. Hamamoto)  
*J. Funct. Anal.* 280 (2021), 108790 (24 pages)
- [5] Sharp Hardy-Leray and Rellich-Leray inequalities for curl-free vector fields  
 (with N. Hamamoto)  
*Mathematische Annalen*, 379, no.1, (2021), 719--742
- [6] A note on radial solutions to the critical Lane-Emden equation with a variable coefficient  
 (with D. Naimen)  
 to appear in the proceeding of The 6th Italian-Japanese Workshop "Geometric Properties for Parabolic and Elliptic PDE's" (Springer INdAM Series 47)
- [7] Best constant of the critical Hardy-Leray inequality for curl-free fields in two dimension, (with N. Hamamoto)  
 to appear in *Math. Inequalities & Applications* (MIA)
- [8] A curl-free improvement of the Rellich-Hardy inequality with weight,  
 (with N. Hamamoto)  
 arXiv:2101.01878
- セミナー・学会発表
- [1] 第 16 回「非線型の諸問題」（Zoom による遠隔開催）講演  
 「Sharp Hardy-Leray inequality for curl-free fields with a remainder term」  
 （2020 年 9 月 8 日）
- [2] 2020 年秋季総合分科会（熊本大学）函数方程式論分科会講演（COVID-19 感染拡大による遠隔開催）（2020 年 9 月 22 日）  
 濱本直樹・高橋太「渦無し場に対する Rellich-Hardy 不等式の最良定数」
- [3] Saga Workshop on Partial Differential Equations (Zoom による遠隔開催) 講演  
 「1 次元分数べき Trudinger-Moser 不等式の最大化元の存在・非存在について」  
 (2021 年 3 月 5 日)
- (田丸 博士)
- セミナー等での口頭発表--タイトル、場所、セミナー(等)名、日程、等
- [1] A commutativity condition for subsets in quandles --- a generalization of antipodal subsets.  
 筑波大学微分幾何学セミナー (online), 2021/01/05.
- [2] Codimension one Ricci soliton subgroups of solvable Iwasawa groups.  
 部分多様体幾何とリー群作用 2020 (online), 2021/03/19.
- 雜誌・論文発表--名前、タイトル、雑誌名、等
- [1] Takahiro Hashinaga, Akira Kubo, Yuichiro Taketomi, Hiroshi Tamaru,  
 A Lie theoretic interpretation of realizations of some contact metric manifolds.  
 Preprint. OCAMI Preprint Series 20-26
- [2] Miguel Dominguez-Vazquez, Victor Sanmartin-Lopez, Hiroshi Tamaru,  
 Codimension one Ricci soliton subgroups of solvable Iwasawa groups.  
*J. Math. Pures Appl.*, to appear.

- [3] Luis Pedro Castellanos Moscoso, Hiroshi Tamaru,  
 A classification of left-invariant symplectic structures on some Lie groups.  
 Preprint. OCAMI Preprint Series 20-19
- [4] Yuji Kondo, Hiroshi Tamaru,  
 A classification of left-invariant Lorentzian metrics on some nilpotent Lie groups.  
 Preprint. OCAMI Preprint Series 20-16
- [5] Akira Kubo, Mika Nagashiki, Takayuki Okuda, Hiroshi Tamaru,  
 A commutativity condition for subsets in quandles --- a generalization of antipodal  
 subsets.  
 Preprint. OCAMI Preprint Series 20-26
- [6] Konomi Furuki, Hiroshi Tamaru,  
 Flat homogeneous quandles and vertex-transitive graphs.  
 Preprint.

(坪田 誠)

- 論文

- [1] 湯井悟志、小林未知数、坪田誠  
 量子乱流状態における超流動の2流体模型—量子渦と熱励起成分の相互作用が引き起こす奇妙な現象  
 日本物理学会誌、第76巻第1号、pp28-31、2021
- [2] Sosuke Inui, Tomo Nakagawa, and Makoto Tsubota  
*Bathtub vortex in superfluid 4He*  
Phys. Rev. B.102, 224511 (2020) :arXiv:2010.13398
- [3] Sosuke Inui and Makoto Tsubota  
*Spherically symmetric formation of localized vortex tangle around a heat source in superfluid 4He*  
Phys. Rev. B.101, 214511 (2020) :arXiv:2004.14616
- [4] Satoshi Yui, Hiromichi Kobayashi, Makoto Tsubota, and Wei Guo  
*Fully Coupled Dynamics of the Two Fluids in Superfluid 4He: Anomalous Anisotropic Velocity Fluctuations in Counterflow*  
Phys. Rev. Lett.124, 155301 (2020):arXiv:1911.01628v1
- [5] Tomo Nakagawa, Sosuke Inui, Makoto Tsubota, and Hideo Yano  
*Statistical laws and self-similarity of vortex rings emitted from a localized vortex tangle in superfluid 4He*  
Phys. Rev. B.101, 184515 (2020) :arXiv:2002.05387
- [6] Toshiaki Kanai, Wei Guo, Makoto Tsubota, and Dafei Jin  
*Torquing the Condensate: Angular Momentum Transport in Bose-Einstein Condensates by Solitonic "Corkscrew"*

Phys. Rev. Lett. 124, 105302 (2020)

• 口頭発表

[1] 小林宏充、湯井悟志、坪田誠  
超流動  $4\text{He}$  における常流体の速度変動  
日本物理学会、2020 年秋季大会、2020.9.11

[2] 中川朋、乾聰介、坪田誠  
超流動  $4\text{He}$  の量子渦タンブルのフラクタル次元  
日本物理学会、2020 年秋季大会、2020.9.11

[3] 乾聰介、中川朋、坪田誠  
超流動  $4\text{He}$  の吸い込み渦と量子渦の分布  
日本物理学会、2020 年秋季大会、2020.9.11

(西尾 昌治)

• 論文

[1] Masaharu Nishio and Katsunori Shimomura,  
Reproducing properties for iterated parabolic operators of fractional order,  
Math. Reports, Romanian Academy, to appear.

[2] Y. Hishikawa, M. Nishio, K. Shimomura and M. Yamada,  
Function spaces induced by two parabolic Bloch spaces, submitted.

• 口頭発表

[1] Y. Hishikawa, M. Nishio, K. Shimomura and M. Yamada,  
Function spaces induced by two parabolic Bloch spaces,  
日本数学会年会, 慶應大学, 2021 年 3 月 15 日~18 日.

(濱野 佐知子)

• 論文

[1] Sachiko Hamano, On rigidity of pseudoconvex domains fibered by open Riemann surfaces according to directional moduli (submitted).

[2] Sachiko Hamano, Variational formulas for hydrodynamic differentials and application to the simultaneous uniformization problem (submitted).

[3] Sachiko Hamano and Masakazu Shiba, The hydrodynamic period matrices and closings of an open Riemann surface of finite genus (submitted).

• 口頭発表

[1] 濱野佐知子, The hydrodynamic period matrices and closings of an open Riemann surface of finite genus, 東京大学・複素解析幾何セミナー (東京大学大学院数理科学研究科) 2021 年 1 月 18 日オンライン開催.

(福井 充)

• 論文

[1] Matsumoto Y, Sawa K, Fukui M, Oyanagi J, Yoshimoto N, Suzumura T, Watanabe T, Kaneda H, Mitsuoka S, Asai K, Kimura T, Yamamoto N, Hirata K, Koh Y, Kawaguchi T

Predictive impact of low-frequency pretreatment T790M mutation in patients with EGFR-mutated non-small cell lung cancer treated with EGFR tyrosine kinase inhibitors.

Lung cancer 2020(139)p80-88

[2] Ogawa K, Koh Y, Kaneda H, Izumi M, Matsumoto Y, Sawa K, Fukui M, Taniguchi Y, Yoshimoto N, Tamiya A, Ando M, Kubo A, Isa SI, Saka H, Matsumura A, Kawaguchi T.

Can smoking duration alone replace pack-years to predict the risk of smoking-related oncogenic mutations in non-small cell lung cancer? A cross-sectional study in Japan  
BMJ Open. 2020(10):e035615. doi: 10.1136

(古澤 昌秋)

• 論文

[1] (with Kazuki Morimoto) Refined global Gross-Prasad conjecture on special Bessel periods and Boecherer's conjecture.

Journal of the European Mathematical Society 23 (2021), no. 4, 1295- 1331.

(堀口 達也)

• 論文

[1] M. Harada, T. Horiguchi, S. Murai, M. Precup, and J. Tymoczko, A filtration on the cohomology rings of regular nilpotent Hessenberg varieties, to appear in Mathematische Zeitschrift

• 口頭発表

[1] 堀口 達也, Hessenberg 多様体に纏わる話題, 大阪市立大学 談話会  
2020 年 10 月 7 日

[2] 堀口 達也, Topics on Hessenberg varieties, International seminar for young researchers "Algebraic, combinatorial and toric topology" 2020 年 12 月 17 日

[3] 堀口 達也, Hessenberg varieties and toric orbifolds, Toric Topology 2021 in Osaka 2021  
年 3 月 24 日

(松岡 千博)

• 学術論文

[1] C. Matsuoka and K. Nishihara,

Nonlinear interaction between bulk point vortices and an unstable interface with non-uniform velocity shear such as Richtmyer-Meshkov instability,  
Phys. Plasmas, Vol. 27, 052305\_1-11 (2020) (査読有)

[2] C. Matsuoka,

Nonlinear interaction between bulk vortices and the interface in the incompressible

- Richtmyer-Meshkov instability,  
 High Energy Density Phys. Vol. 36, 100834\_1-5 (2020). (査読有)
- [3] C. Matsuoka, Nonlinear dynamics of double-layer unstable interfaces with non-uniform velocity, Shear, Phys. Fluids, Vol. 32, 102109\_1-14 (2020). (査読有)
- [4] C. Matsuoka, K. Nishihara and F. Cobos-Campos, Linear and nonlinear interactions between an interface and bulk vortices in Richtmyer-Meshkov instability, Phys. Plasmas, Vol. 27, 112301\_1-10 (2020). (査読有)
- 学術論文プレプリント
- [1] C. Matsuoka,  
 Motion of unstable two interfaces in a three-layer fluid with uniform shear,  
 Submitted to Fluid Dynam. Res.
- 口頭発表
- [1] リヒトマイヤー・メシュコフ不安定性における界面とバルク渦の非線形相互作用に関する研究, 松岡千博「光・量子ビーム科学合同シンポジウム 2020」大阪大学レーザー科学研究所  
 [2] Cisco WebEx event による遠隔研究集会) 2020. 9. 29
- (宮地 兵衛)
- 学術論文
- [1] T. Kuwabara, H. Miyachi, and K. Wada, On the Mackey formulas for cyclotomic Hecke algebras and categories  $\mathcal{O}$  of rational Cherednik algebras, Osaka Journal of Mathematics, 58 (2021), 103-134
- [2] 宮地兵衛, 書評 ゲームで大学数学入門 : スプラウトからオイラー・ゲッターまで[安田健彦著], 数学 (2020) 25(3) pp.92-96
- (山名 俊介)
- 雑誌・論文発表--名前、タイトル、雑誌名、等
- [1] Yamana, Shunsuke, On the lifting of Hilbert cusp forms to Hilbert-Hermitian cusp forms. *Trans. Amer. Math. Soc.* 373 (2020), no. 8, 5395– 5438.
- [2] Ikeda, Tamotsu; Yamana, Shunsuke, On the lifting of Hilbert cusp forms to Hilbert-Siegel cusp forms. *Ann. Sci. Éc. Norm. Supér. (4)* 53 (2020), no. 5, 1121– 1181.
- [3] Ming-Lun Hsieh; Shunsuke Yamana, Restriction of Eisenstein series and Stark-Heegner points, preprint,  
 arXiv:2002.11858, <https://arxiv.org/abs/2002.11858>
- [4] Ming-Lun Hsieh; Shunsuke Yamana, Twisted triple product  $p$ -adic L-functions, preprint
- セミナー等での口頭発表--タイトル、場所、セミナー(等)名、日程、等
- [1] 8/7, Base change and central values of triple product L-series, バークレー(オンライン学会に変更),  
 The Eighth Pacific Rim Conference in Mathematics  
<https://wp.math.berkeley.edu/pacificrim2020/sessions/number-theory-august-5-7/>

[2] 8/21, Base change and central values of triple product L-series, 韓国(オンライン), KIAS number theory seminar

(吉田 雅通)

・プレプリント

[1] Finite beta-expansion and odometers

[2] Some class of cubic Pisot numbers with finiteness property

(森山 翔文)

・論文

[1] Tomohiro Furukawa, Sanefumi Moriyama and Yuji Sugimoto,  
“Quantum Mirror Map for Del Pezzo Geometries,”  
Journal of Physics A: Mathematical and Theoretical 53 (2020) 38,  
[arXiv:1908.11396 [hep-th]].

doi:10.1088/1751-8121/ab93fe

[2] Sanefumi Moriyama,

“Spectral Theories and Topological Strings on del Pezzo Geometries,”  
Journal of High Energy Physics 10 (2020) 154,  
[arXiv:2007.05148 [hep-th]].

doi:10.1007/JHEP10(2020)154

[3] Tomohiro Furukawa, Sanefumi Moriyama and Tomoki Nakanishi,  
“Brane Transitions from Exceptional Groups,”  
[arXiv:2010.15402 [hep-th]]. (投稿中)

・著書

[1] 森山翔文,

「M理論と行列模型 - 超対称チャーン-サイモンズ理論が切り拓く数理物理学 - 」  
(サイエンス社, SGCライブラリ 158, 2020 年)

・口頭発表

[1] “Nambu brackets, Chern-Simons theories, Quantum curves & M2-branes” ,  
研究集会「南部力学がつなぐ時空トポロジーとミクロ・マクロ渦磁場構造形成」 ,  
大阪市立大学, 2020/09/28-2020/10/01.

[2] “高次元超重力理論の古典解への示唆” ,

The 4th workshop on “Mathematics and Physics in General Relativity”,  
大阪市立大学, 2021/03/20-2021/03/21.

[3] “M2-branes: Integrability & Weyl Group” ,

第 27 回大阪市立大学国際学術シンポジウム

「可視化の数理と、対称性およびモジュライの深化」

大阪市立大学, 2021/03/21-2021/03/26.