

令和7年度 教員・数学研究所特任教員の業績
(論文と講演発表等)

(秋吉 宏尚)

• 論文

[1] Hirotaka Akiyoshi, Finiteness of Dirichlet domains of cusped hyperbolic manifolds, *Topology and its Applications*, June 2025, Vol. 367, No. 109349, 10.1016/j.topol.2025.109465

• 講演発表

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[1] Hirotaka Akiyoshi, Finding Dirichlet domains, II, The 16th TAPU-KOOK Joint Seminar on Knots and Related Topics, Kyungpook National University (韓国), 2025年7月31日.

(国内)

[1] 秋吉宏尚, フォード領域を拡張する, 研究集会「拡大 KOOK セミナー2025」, 大阪工業大学, 2025年8月28日.

[2] 秋吉宏尚, 双曲幾何における凸集合と双対性, 上教大トポロジーセミナー, 上越教育大学, 2025年10月18日.

[3] 秋吉宏尚, An extension of Ford domain, 研究集会「トポロジーとコンピュータ2025」, 九州大学, 2025年12月6日.

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[1] Hirotaka Akiyoshi, An extension of the Ford domain for Kleinian groups, 執筆中.

(阿部 健)

• 論文

[1] MHS equilibria in the non-resistive limit to the randomly forced resistive magnetic relaxation equations (with I.-J. Jeong, F. Pasqualotto, and N. Sato), *Annals of PDE*, January 2026, Vol. 12, No. 2, arXiv:2506.08394

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[1] 阿部健, Homogeneous steady state for the generalized SQG equations, Variational Principle and Dynamics of Vortices, Chinese Academy of Science, Beijing, 2026年3月20日

[2] 阿部健, MHS equilibria in the non-resistive limit to the randomly forced resistive magnetic relaxation equations, Fluid Dynamics Equations Research Center - Academic Exchange Seminar, Chinese Academy of Science, Beijing, 2026年3月19日

[3] 阿部健, MHS equilibria in the non-resistive limit to the randomly forced resistive magnetic relaxation equations, PDE seminar at KIAS, Seoul, 2026年3月4日

- [4] 阿部健, Homogeneous steady state for the generalized SQG equations, Advances in Fluid Equations, Duke Kunshan University, 2025 年 11 月 29 日
- [5] 阿部健, Stability of Lamb dipoles without using mass, PDE seminar at Seoul National University, 2025 年 9 月 18 日
- [6] 阿部健, Homogeneous steady state for the generalized SQG equations, PDE seminar at Shanghai Jiao Tong University, 2025 年 8 月 14 日
- [7] 阿部健, MHS equilibria in the non-resistive limit to the randomly forced resistive magnetic relaxation equations, Advances in Mathematical Fluid Dynamics, Peking University, 2025 年 6 月 27 日

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- [1] Stability of force-free fields in weak ideal limits of Leray--Hopf solutions I: Linear force-free fields, Nonlinear Analysis: Real World Applications, 90, (2026), 104576
- [2] Stationary self-similar profiles for the two-dimensional inviscid Boussinesq equations (with D. Ginsberg and I.-J. Jeong), Arch. Rational Mech. Anal., to appear, arXiv:2410.21765
- [3] Stability of force-free fields in weak ideal limits of Leray--Hopf solutions II: Nonlinear force-free fields, Commun. Math. Phys., to appear, arXiv:2206.00899
- [4] Existence and stability of Sadvskii vortices: from patch to smooth vortices (with K. Choi, I.-J. Jeong, Y.-J. Sim, and K. Woo), arXiv:2507.00910v2
- [5] Homogeneous steady states for the generalized surface quasi-geostrophic equations (with J. Gomez-Serrano and I.-J. Jeong), arXiv:2510.03009
- [6] Stability of Lamb dipoles for odd-symmetric and non-negative initial disturbances without finite mass condition (with K. Choi and I. J. Jeong), arXiv:2510.00539
- [7] Stability for multiple Lamb dipoles (with I.-J. Jeong and Y. Yao), arXiv:2507.16474
- [8] Topological invariants in Higher-dimensional Magnetohydrodynamics (with N. Sato and M. Yamada), arXiv:2506.13251

(伊師 英之)

• 講演発表

- [1] 伊師英之, 一般化最高ウェイトユニタリ表現について, 第 3 回名古屋数理情報科学研究会 2025, ナディアパーク (名古屋), 2025 年 7 月 6 日
- [2] 伊師英之, アフィン等質凸領域の行列実現, 研究集会「葉層構造の幾何学とその応用」, 京都教育大学, 2025 年 12 月 12 日
- [3] 伊師英之, 可解リー群の最高ウェイトユニタリ表現, 2025 年度表現論ワークショップ, 2026 年 1 月 10 日
- [4] 伊師英之, 指数型変換モデルの行列実現, 第 20 回日本統計学会春季集会, 同志社大学, 2026 年 3 月 7 日

[5] Hideyuki Ishi, Generalized highest weight unitary representations of solvable Lie groups, RIKKYO MathPhys 2026, 立教大学, 2026年3月16日

[6] Hideyuki Ishi, On Jordan algebras consisting of real symmetric matrices, Workshop "Harmonic analysis and Representation Theory", 城西大学, 2026年3月22日

(石田 裕昭)

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[1] Hiroaki Ishida; Hisashi Kasuya, Double-sided torus actions and complex geometry on $SU(3)$, Journal of Symplectic Geometry, September 2025, Vol. 23, 751-777, 10.4310/jsg.250820105435

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[1] 石田 裕昭, Double-sided torus actions and complex geometry on $SU(3)$, 千歳幾何学研究集会 2025, 公立千歳科学技術大学, 2025年8月5日.

Hiroaki Ishida, GIT stability and complex structures on $SU(3)$, PNU Geometry and Topology Seminar, Pusan National University, 2025年11月3日.

[2] 石田 裕昭, GIT stability and biquotients of $SU(3)$, 淡路島幾何学研究集会 2026, 阿那賀地区公民館 2026年2月1日.

[3] Hiroaki Ishida, Classification of rank 2 decomposable vector bundles over a projective bundle, Focus Seminar on Toric Topology, Ajou University, 2026年2月19日.

[4] Hiroaki Ishida, GIT stability and biquotients of $SU(3)$, The 8th Korea Toric Topology Workshop, KIAS, 2026年2月23日.

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[1] 尾角正人、箱玉系再訪、パウルヴェ方程式と可積分系、神戸大学、2026年3月19日

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[1] Masato Okado, Travis Scrimshaw, Affine crystal operators for the adjoint Kirillov-Reshetikhin crystals of type E, in preparation.

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(嘉田 勝)

(加藤 希理子)

(加藤 信)

• 講演発表

[1] 加藤 信, Isotropic decompositions of minimal surfaces in \mathbb{R}^3 , Workshop on Geometry in Oita, J:COM ホルトホール大分, 2025 年 8 月 23 日.

[2] 加藤 信, 極小曲面の分解と相対 weight, 淡路島幾何学研究集会 2026, 南あわじ市阿那賀地区公民館, 2026 年 1 月 31 日.

[3] 加藤 信, ささやかな open problems, 名古屋工業大学, 名工大幾何学小研究集会 2026, 2026 年 3 月 5 日.

• プレプリント等

[1] Shin KATO : Classification of simple ends of minimal surfaces in \mathbb{R}^3 and decompositions of minimal surfaces in \mathbb{R}^3 , 投稿中.

(壁谷 喜継)

• 講演発表

[1] Yoshitsugu Kabeya, "Radial solutions to an elliptic system of Choquard-type and related topics", UK-Japan Workshop on Nonlinear PDEs, International Centre for Mathematical Sciences, Edinburgh, July 4th, 2025.

[2] 壁谷 喜継, 「高次元での Hartree-Fock の方程式の分岐解」, RIMS 共同研究 (グループ型 A), 京都大学数理解析研究所, 2026 年 3 月 5 日.

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(菅 徹)

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[2] Toru Kan; Yoshihisa Morita; Ken-ichi Nakamura; Chang-Hong Wu, Asymmetric front propagation for the bistable reaction-diffusion equation on a metric graph, Journal of Differential Equations, December 2025, Vol. 457, 114039, 10.1016/j.jde.2025.114039

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- [1] Toru Kan, Boundedness of global solutions of superlinear heat equations, UK-Japan Workshop on Nonlinear PDEs, The International Centre for Mathematical Sciences, Edinburgh, The United Kingdom, July 2, 2025
- [2] Toru Kan, Traveling fronts and standing pulses in a Flux-limited Keller-Segel model with a growth term, ReaDiNet 2025, Hokkaido University, October 20, 2025
- [3] Toru Kan, Boundedness of global solutions of superlinear heat equations, Geometric Aspects of Partial Differential Equations, Research Institute for Mathematical Sciences, Kyoto University, December 9, 2025

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- [1] Ryo Kanda, “環の表現論におけるスペクトラム理論”, 第70回代数学シンポジウム, 九州大学, 2025年8月27日
- [2] Ryo Kanda, “Ziegler spectrum”, 環論および表現論ワークショップ, Zoom, 2026年3月16日
- [3] Ryo Kanda, “Ziegler spectrum”, 環論および表現論ワークショップ, Zoom, 2026年3月17日

(小池 貴之)

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- [2] T. Koike, N. Ogawa, On the neighborhood of a torus leaf and dynamics of holomorphic foliations, Tohoku Math. J., August 2025, Vol. 77, 421-443, 10.2748/tmj.20231108
- [3] Y. Hashimoto, T. Koike, Ueda's lemma via uniform Hormander estimates for flat line bundles, Kyoto J. Math., February 2026, Vol. 66, 129-176,
- [4] T. Koike, T. Uehara, A Gluing Construction of K3 Surfaces, Michigan Math. J., October 2025, Advance Publication, 1-53, 10.1307/mmj/20236461

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- [1] Formal principle and semi-positivity in complex analytic geometry, Joint Seminar on Complex Algebraic Geometry and Complex Analysis (Bochum -

Essen - Köln - Munster - Wuppertal), University of Wuppertal, Wuppertal, ドイツ, 2025 年 4 月.

[2] Pluripotential geometry on semi-positive effective divisors of numerical dimension one, Oberseminar Algebraische Geometrie, Saarland University, Saarbrücken, ドイツ, 2025 年 11 月.

[3] The complex geometry of weak and strong pseudoconvexity, OCAMI 談話会, 大阪公立大学, 大阪府大阪市, 2026 年 3 月.

(研究集会)

[1] Intersection matrix and neighborhood structure of complex curves, Shenzhen International Workshop on Several Complex Variables and CR geometry II, 南方科技大学, 中華人民共和国深セン市, 2025 年 9 月.

[2] Non-embeddability of Levi-flat manifolds and Ueda theory, Several complex variables and applications, Wolfgang Pauli Institute, ウィーン, オーストリア, 2025 年 10 月.

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[1] T. Koike, T. Ueda, Intersection matrix and neighborhood structure of complex curves, preprint.

[2] T. Koike, Pluripotential geometry on semi-positive effective divisors of numerical dimension one, arXiv:2511.13903.

(今野 良彦)

• 講演発表

[1] 今野良彦.

講演タイトル: Shrinkage estimators in multivariate normal distributions with block compound symmetry covariance structures.

名称: 研究集会「複雑・高次元データの統計科学の新展開：深化と融合」

場所: 東北大学青葉山キャンパス情報科学研究科棟 2 階大講義室).

日時: 2025 年 9 月 23 日

[2] 今野良彦.

講演タイトル: Shrinkage Estimators in Multivariate Normal Distributions with Block Compound Symmetry Structures.

名称: The 13th Conference of the IASC-ARS

場所: University of Economics, Ho Chi Minh City, Vietnam.

日時: 2025 年 12 月 5 日

(佐野 昂迪)

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[1] 佐野昂迪, On derivatives of p -adic L -functions for motives, Iwasawa 2025, NCTS (Taipei), 2025 年 6 月 30 日.

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[1] T. Sano, On the Tamagawa number conjecture for modular forms twisted by anticyclotomic Hecke characters, preprint. arXiv:2510.01601

[2] F. Castella, T. Sano, On refined nonvanishing conjectures by Kurihara and Kolyvagin, preprint. arXiv:2601.14504

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[2] 張 娟 姫, 曲線複体を用いた結び目の橋分解の研究, OCAMI 談話会, 大阪公立大学, 2025 年 6 月 12 日

[3] Yeonhee Jang, Keeness for bridge splittings of links, The 16th TAPU-KOOK Joint Seminar on Knots and Related Topics, Kyungpook National University, 韓国, 2025 年 7 月 29 日

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(城 崎 学)

• プレプリント等

[1] Manabu Shiroasaki, Some degeneracy theorems of holomorphic curves, 執筆中

(砂川 秀明)

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[1] 砂川秀明, 微分型非線形シュレディンガー方程式における零構造と消散構造, 第9回 PDE Workshop in Miyazaki, 宮崎大学, 2026年1月29日・30日(連続講演)

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[1] Naoki Hamamoto; Futoshi Takahashi, A curl-free improvement of the Rellich-Hardy inequality with weight, *Advances in Nonlinear Studies*, July 2025, Vol. 25, 1204-1234, <https://doi.org/10.1515/ans-2023-0193>

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[3] Futoshi Takahashi, "The critical Hardy inequality for mean zero functions in two dimensions", 慶熙大学解析セミナー講演 (Jongmin Han 氏主催), (2025 年 6 月 13 日)

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(2025年7月1日)

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(田中 潮)

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Preprints and Works in Progress

[1] U. Tanaka, Ledoux's expansion coefficient on metric measure spaces associated with the logarithmic Sobolev inequality gives rise to an exponential concentration, exponential integrability and diameter bounds, in preparation for submission.

[2] U. Tanaka, Upper bounds for Ledoux's expansion coefficient, the spectral gap and the diameter of low dimensional closed Riemannian manifolds with Ricci curvature bounded from below by a non-positive constant, in preparation for submission.

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Software

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[1] K. Kobayashi and H. Tanaka, Unified Relationship between Mean, Variance, and an Arbitrary Number of Quantiles for Symmetric Distribution. (執筆中)

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[2] Hiroshi Tamaru, “Left-invariant pseudo-Riemannian metrics on Lie groups, orbit degenerations, and closed orbit spaces”, Representation Theory and Geometry in Ryukoku (龍谷大学), 2026/02/19

[3] Hiroshi Tamaru, “Ricci solitons on nilpotent Lie algebras obtained from quivers with cycles”, 淡路島幾何学研究集会 2026 (阿那賀地区公民館), 2026/01/30

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[5] Hiroshi Tamaru, “Two-numbers and Euler characteristics for quandles”, 8th Tunisian-Japanese Conference: Geometric and Harmonic Analysis on Homogeneous Spaces and Applications in Honor of Professor Dominique Manchon (Tui Blue Manar, Hammamet), 2025/10/27

[6] Hiroshi Tamaru, “カンドルと離散対称空間入門 II”, 幾何学阿蘇研究集会 (休暇村南阿蘇), 2025/09/04

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