

小林俊行

KOBAYASHI Toshiyuki (1962 大阪)



I ①教授(07) ②数理 ③数学 ④理(数学) ⑤灘 ⑥東大理(数学85), 東大院理(数学87) ⑦なし ⑧理修(87), 理博(90)

II ①リー群と表現論, 非可換調和解析, 不連続群論. 特に, 局所的に均質な空間の全体の形の研究(不連続群論), 無限次元を砕く対称性の理論(表現の分岐則), 極小表現を舞台とした大域解析, 複素多様体における「目に見える作用」を用いた無重複表現の統一理論の構成などが最近の研究テーマです ②日本数学会, アメリカ数学会 ③日本数学会建部賞(97), 日本数学会春季賞(99), 大阪科学賞(06), 日本学術振興会賞(07) ④国際シンポジウム組織: Harmonische Analysis und Darstellungstheorie Topologischer Gruppen組織委員(Oberwolfach, Germany, 2007.10); 第2回高木レクチャー組織委員(東京大学数理, 2007.5), 第1回高木レクチャー組織委員(京都大学数理解析研究所, 2006.11); International Symposium on Representation Theory and Automorphic Forms組織委員(Seoul National University, Korea, 2005.2); 表現論シンポジウム組織委員(淡路島, 2004.11) ⑤招待講演: 「不連続群論の話題から」, 談話会(名古屋大学, 2007.1); “On Compact Locally Symmetric Spaces”, International Conference on Harmonic Analysis and Applications (Sousse, Tunisia, 2006.11); 「無限次元空間を砕く対称性の数学」, 第24回大阪科学賞受賞記念講演(大阪科学技術センター, 2006.11); “Multiplicity-free Representations and Visible Actions on Complex Manifolds”, Analysis Seminar (University of Aarhus, Denmark, 2006.9); “Visible Actions on Complex Manifolds”, Workshop on Representation Theory and Prehomogeneous Vector Spaces (Institut de Recherche Mathématique Avancée, Strasbourg, France, 2006.9); 「コンパクトな局所対称空間について」, RIMS研究集会「表現論と等質空間上の解析学」(京都大学数理研, 2006.8); “Conformally Invariant Hilbert Structure on the Solution Space of the Ultrahyperbolic Laplace Equation on \mathbf{R}^{p+q} ”, Tsukuba Conference on Integral Geometry and Harmonic Analysis(筑波大学, 2006.8); 「重複のない表現と複素多様体における可視的な作用」, 第53回幾何学シンポジウム(金沢大学, 2006.8); “Compact Clifford-Klein Forms of Non-Riemannian Symmetric Spaces”, Mini-Workshop on Lie groups, Algebraic Groups and Transformation Groups (Universität Bielefeld, Germany, 2006.7); “Is the Universe Closed? — Existence Problem of Compact Locally Symmetric Spaces”, colloquium (Technische Universität Darmstadt, Germany, 2006.7); “Branching Problems of Unitary Representations”, Perspectives in Representation Theory — Strategic Workshop and Round Table Discussion (Physikzentrum Bad Honnef, Germany, 2006.7);

“Is the Universe Closed? — Existence Problem of Compact Clifford-Klein Forms of Symmetric Spaces”, colloquium (Universität Paderborn, Germany, 2006.7); 「可視的な作用と重複のない表現」, 談話会(広島大学, 2006.4); 「局所的に同じ対称性をもつ空間がとりうる大域的な形」, 談話会(京都大学, 2006.4); 「複素多様体における可視的な作用について」, 金行壮二先生退職記念研究集会「等質空間の幾何学的諸相」(名城大学, 2006.3); “Multiplicity-free Representations and Visible Actions on Complex Manifolds” (opening lecture), International Conference on Harmonic Analysis, Group Representations, Automorphic Forms and Invariant Theory on the Occasion of Professor Roger Howe’s 60th Birthday (Singapore, 2006.1); “Restrictions of Unitary Representations of Real Reductive Groups”, International Conference on Representations of Real Reductive Groups in honor of R. Parthasarathy (Mumbai, India, 2006.1); 「重複度1の表現と複素多様体上の可視的な作用」(概説講演), 表現論シンポジウム(掛川, 2005.11); “Visible Actions on Complex Manifolds and Multiplicity-free Representations”, RIMSシンポジウム「カルタン幾何の進化発展と関連する数学の諸問題」(京都大学数理研, 2005.10); “Multiplicity-free Representations and Visible Actions on Complex Manifolds: 1. Multiplicity-free theorem; 2. Visible actions on symmetric spaces; 3. Visible actions on non-symmetric spaces” (3 lectures), Workshop on Integral Transformations on Homogeneous Spaces (玉原国際セミナーハウス, 2005.8); “Multiplicity-free Theorem and Visible Actions on Complex Manifolds”, The Asian Mathematical Conference (アジア数学会議(AMC) 2005) (Singapore, 2005.7); “Integral Formulas for the Minimal Representation of the Conformal Group”, Seminar organized by Professor Faraut, Analyse Algébrique (Université Pierre et Marie Curie, France, 2005.6); “Analysis on Homogeneous Spaces Revisited — From Viewpoint of Branching Laws of Unitary Representations”, Harmonic Analysis on Lie Groups and Symmetric Spaces in honor of Jacques Faraut, Joint meeting of Seminar Sophus Lie (Nancy, France, 2005.6); “Visible Actions on Complex Manifolds and Multiplicity-free Representations”, Séminaire Théorie de Lie et Applications (Université de Poitiers, France, 2005.6); “Analysis on Minimal Representation of Indefinite Orthogonal Groups”, Séminaire Théorie de Lie et Applications, Groupe de travail (Université de Poitiers, France, 2005.5); “Visible Actions on Complex Manifolds and Multiplicity-free Theorems” (2 lectures), International Symposium on Representation Theory and Automorphic Forms (Seoul National University, Seoul, Korea, 2005.2); 「重複度1の表現について」, 談話会(大阪市立大学, 2005.2); 「極小表現の極小 K -type の Fourier変換の公式について」, RIMS研究集会「 $Sp(2, \mathbf{R})$ と $SU(2, 2)$ 上の保型形式III」(京都大学数理研, 2004.9); “Restriction of Unitary Representations of Real Reductive Groups”, 第6回霧零軌道と表現論研究集会(河口湖, 2004.9); “Conformal Geometry

and Analysis on Minimal Representation of $O(p, q)$ ”, PACOM 2004, Parallel Session: Lie Groups and Representation Theory (Tunis, Tunisia, 2004.9); “Restriction of Unitary Representations — Discrete and continuous spectrum”(基調講演), Sixth Pan-African Congress of Mathematicians (汎アフリカ数学会議 (PACOM) 2004) (Institut National des Sciences Appliquées et de la Technologie (INSAT), Tunis, Tunisia, 2004.9); “Schrödinger Model of the Minimal Representation of the Lorentz Group $O(p, q)$ ”, Workshop on Harmonic Analysis and Homogeneous Spaces in honor of Professor G. van Dijk (Lorentz Center, Leiden University, the Netherlands, 2004.8); “Visible Actions on Complex Manifolds and Multiplicity-free Representations”, Conference on Lie Groups and Representation Theory (Odense, Denmark, 2004.8); “Restriction of Unitary Representations of Reductive Lie Groups”, International Symposium on Representation Theory and Harmonic Analysis (Urumqi, Xinjiang, China, 2004.8); “On Complex Geometry and Multiplicity-free Representations”, Fourth Workshop on Nilpotent Orbits and Representation Theory (名古屋大学, 2004.2); “Visible Actions on Complex Manifolds and Multiplicity One Theorems” (opening lecture), Finite and Infinite Dimensional Complex Geometry and Representation Theory (Oberwolfach, Germany, 2004.2); “Visible Actions on Complex Manifolds, and their Applications to Representation Theory”, Mathematisches Kolloquium, Technische Universität Clausthal, Germany, 2004.1); 「両側剰余空間 $U(n_1) \times U(n_2) \times U(n_3) \setminus U(n) / U(p) \times U(q)$ — 作用の可視性, Cartan分解の一般化」, 2003年度幕張ワークショップ(放送大学セミナーハウス, 2004.1); 「非リーマン等質空間の不連続群について」, 大岡山談話会(東京工業大学, 2003.12); 「重複度1の表現について」, 大談話会(京都大学, 2003.11); “Survey Lecture on Representation Theory of Lie Groups; Restriction of Unitary Representations” (2 lectures), (Seoul National University, Korea, 2003.11); “Restriction of Unitary Representations”, 学術振興会日欧科学協力事業・日独セミナー「Lie群: 解析と幾何」, 日独シンポジウム(京都大学, 2003.10); 「非リーマン等質空間の不連続群について」, 日本数学会秋季総合分科会, 幾何学分科会特別講演(千葉大学, 2003.9); “Multiplicity One Theorem on Branching Laws and Geometry of Complex Manifolds”, RIMS研究集会「Lie Theoryのひろがり」と新たな進展」(京都大学数理研, 2003.7); “A Multiplicity Theorem in the Branching Laws of Representations”, Théorie des Représentations, Théorie des Groupes (Université de Paris VII, France, 2003.6); “Branching Problems of Representations of Lie Groups”, colloquium, Université de Reims, France, 2003.6); “Analysis on Minimal Representations and Conformal Geometry”, Séminaire d’Analyse Harmonique, (Institut de Mathématiques Elie Cartan, Université Henri Poincaré, France, 2003.5); 「Lorentz群の極小表現のSchrödingerモデル」, 幕張ワークショップ(放送大学セミナーハウス, 2003.1); 「 $O(p, q)$ の

極小ユニタリ表現のSchrödingerモデル」, 短期共同研究会「IV型対称領域上の保型形式の研究」(京都大学数理研, 2002.12); “Conformal Geometry and Analysis on Minimal Representations of $O(p, q)$ ”, The 2002 Twente Conference on Lie Groups (Twente University, the Netherlands, 2002.12); “Multiplicity One Theorem in the Branching Laws”, Workshop on Representations of Lie Groups, Harmonic Analysis on Homogeneous Spaces and Quantization (Lorentz Center, Leiden University, the Netherlands, 2002.12); “Branching Problems of Unitary Representations” (series lectures), 表現論シンポジウム(静岡, 2002.11); “Complex Geometry and Multiplicity One Theorem in Branching Laws”, Seminar on Lie Groups and Representation Theory (National University of Singapore, Singapore, 2002.10); “Restriction of Unitary Representations”, Special Year Program on Representation Theory of Lie Groups (Institute for Mathematical Sciences, Singapore, 2002.10); “Conformal Geometry and Global Solutions to the Yamabe Equations on Classical Pseudo-Riemannian Manifolds”, Special Year Program on Representation Theory of Lie Groups (Institute for Mathematical Sciences, Singapore, 2002.9); “Branching Problems of Unitary Representations”, International Congress of Mathematicians (国際数学会議 (ICM) 2002) (Beijing, China, 2002.8); “Conformal Geometry and Analysis on Minimal Representations of $O(p, q)$ ”, Workshop on Representation Theory of Lie Groups, Special Year Program on Representation Theory of Lie Groups (Institute for Mathematical Sciences, Singapore, 2002.8); 「山辺作用素の解空間における不変な内積について」, RIMS研究集会「非可換代数系の表現と調和解析」(京都大学数理研, 2002.7); “Canonical Hilbert Spaces of Ultrahyperbolic Solutions”, 談話会(東京大学, 2002.6) ⑥論文: Proper action on a homogeneous space of reductive type, *Math. Ann.* 285 (1989), 249-263; A necessary condition for the existence of compact Clifford-Klein forms of homogeneous spaces of reductive type, *Duke Math. J.* 67 (1992), 653-664; Discrete decomposability of the restriction of $A_4(\lambda)$ with respect to reductive subgroups and its applications, *Invent. Math.* 117 (1994), 181-205; Invariant measures on homogeneous manifolds of reductive type, *J. reine und angew. Math.* 490 (1997), 37-53; Discrete decomposability of the restriction of $A_4(\lambda)$ with respect to reductive subgroups II: microlocal analysis and asymptotic K -support, *Annals of Math.* 147 (1998), 709-729; Discrete decomposability of the restriction of $A_4(\lambda)$ with respect to reductive subgroups III: restriction of Harish-Chandra modules and associated varieties, *Inventiones Mathematicae* 131 (1998), 229-256; Discontinuous groups for non-Riemannian homogeneous spaces, *Mathematics Unlimited — 2001 and Beyond* (B. Engquist and W. Schmid, eds.), Springer-Verlag, 2000, pp. 723-748 [邦訳: 「非リーマン等質空間の不連続群論」『数学の最先端 21世紀への挑戦』, シュプリンガ

ー・フェアラー東京, 2002, pp.18-73]; Branching problems of unitary representations, Proc. of ICM, Beijing 2002, 2 (2002), 615-627; Analysis on minimal representations of $O(p, q)$, I, II, III, *Adv. Math.* 180 (2003), 486-512, 513-550, 551-595 (B. Ørsted氏との共著); Multiplicity-free representations and visible actions on complex manifolds, *Publ. RIMS* 41 (2005), 497-549, special issue commemorating the fortieth anniversary of the founding of RIMS; Compact Clifford-Klein forms of symmetric spaces: revisited, *Pure and Appl. Math. Quarterly* 1 (2005), 603-684, Special Issue: In Memory of Professor Armand Borel (吉野太郎氏との共著). 書籍: 『リー群と表現論』, 岩波書店, 2005, 610頁(大島利雄氏との共著)

III ①~③なし ④数学講究(理学部) ⑤なし ⑥「不連続群論の話題から」(名古屋大学集中講義); 「対称性の数学」(京都大学数理解析研究所, 全学共通); 「複素解析的手法によるユニタリ表現の話題から」(東大数理, 集中講義); 「群作用とリー群の表現論」(広島大学, 集中講義) ⑦“Clifford-Klein Forms of Non-Riemannian Homogeneous Spaces”, International Conference and Instructional Workshop: Geometry Topology, Analysis of Locally Symmetric Spaces and Discrete Groups (Beijing, China, 2006); “Unitary Representations, Restrictions, and their Applications”, Summer School: Microlocal and Geometric Methods in Representation Theory (Günzburg, Germany, 2006); “Conformal Geometry and Analysis on Minimal Representations”, The 22nd Winter School on Geometry and Physics (Srni, Czech Republic, 2002); “Restriction of Representations to Reductive Subgroups” (24 lectures, ハーバード大学・大学院講義, 2001); European School (1994, 2000)

IV ①なし ②Japanese Journal of Mathematics編集責任者, Publications of the Research Institute for Mathematical Sciences編集委員, Journal of Mathematical Society of Japan編集委員長(-2006), 日本数学会理事, 日本学術会議連携会員 ③Geometriae Dedicata編集委員, International Mathematics Research Notices編集委員, International Journal of Mathematics編集委員, International Mathematics Research Papers編集委員