





# 1 数学専攻

## 1-1 専攻の理念と目標

## 1-2 専

## 1-2-2 教職員の異動

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29	4	1	H2 3 31
30	1	18	H4 9 30
29	10	1	
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30	3	31	

## 1-3 専攻の大学院教育

### 1-3-1 大学院教育の目標とアドミッション・ポリシー

### 1-3-2 大学院教育の成果とその検証

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### 1-3-3 大学院生の国内学会発表実績

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### 1-3-4 大学

Schrödinger

2

Cohomogeneity one actions of disconnected Lie groups on symmetric spaces  
of noncompact type

1

A characterization of alternating link exteriors in terms of cubed complexes

Sturm-Liouville

Ambarzumyan

Extending homeomorphisms of the genus-2 surface over the 3-sphere

( 2 3 )

### 1-3-7 TAの実績

29	...	8
		12
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### 1-3-8 大学院教育の国際化

## 1-4 専攻の研究活動

### 1-4-1 研究活動の概要

#### 数学教室談話会

1

2017 5 16 13:00-14:00  
B707

2

2017 5 30 13:00-14:00  
B707

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2017 6 6 13:00-14:00  
B707

Jeffrey Weeks

Visualizing Fn  
4239 8 8 35<22/36<22  
D929  
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5

2017 7 25 13 00-14 00  
B707

Exact WKB analysis and resurgent analysis

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2017 10 3 13 00-14 00  
B707

2017 11 28 13 00-14 00  
B707

Morrey spaces and related problems

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2017 12 5 13 00-14 00  
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2017 12 12 13 00-14 00  
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2017 7 11 7 14  
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B 301  
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2017 Participating school in analysis of PDE Stability of solitons and periodic waves [ ]  
2017 8 21 8 25  
KAIST, Daejeon, Korea  
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Mathew Johnson University of Kansas Masaya Maeda Chiba Tetsu Mizumachi  
Hiroshima Soonsik Kwon KAIST

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Capital Normal University-Hiroshima University Joint conference on Mathematics [ ]  
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Fuquan FANG CNU Hailiang LI CNU Shanzhong SUN  
CNU



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Branched Coverings, Degenerations, and Related Topics 2018 [ ]  
2018 3 5 3 9

E104

56

in [ ]  
 2018 3 14 3 15

20

数学専攻各研究グループにより開催されたセミナー

代数学セミナー

2017 4 21 15  
 B701

PD

2017 6 2 15  
 B701  
 D2  
 K3 Pi card

2017 6 16 15  
 B701  
 D2  
 A3

2017 6 23 15  
 B701

Model theory, p-adic and motivic integration

2017 7 28 15  
 B701

Calabi-Yau

2017 10 6 15  
 B701

q=0 p Hecke

2017 11 24 16  
 B701

Effective non-vanishing for weighted complete intersections

2017 12 1 15

B701

D2

A3

2017 12 8 15

B701

Immanant

Littlewood-Richardson

2018 1 19 15

B701

Norbert A'Campo

Uniformisation by minimizing energy of curvature

広島組合せ論セミナー

2017 11 11 11:00 - 12:30

Nexus21 NX-709

広島大学トポロジー・幾何セミナー

2017 4 7 15:00 - 16:30

707

2017 4 18 15:00 - 16:30

707

Youngsik Huh Hanyang University

Problems on graphs in 3-space: Immersion into plane and linear embedding into 3-space

2017 5 9 13:30 - 15:00

707

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2017 6 20 15:00 - 16:30



2017 10 3 15 00 - 16 30  
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Luisa Paoluzzi

Character varieties of knots and their reductions mod p

2017 11 14 15 00 - 16 30  
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2017 11 21 15 00 - 16 30  
707

Symmetric braids arisen as monodromies of branched virtual fibrations of closed 3-manifolds

2017 11 28 15 00 - 16 30  
702

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2017 12 12 15 00 - 16 30  
702

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"Monodromy groups" of Heegaard surfaces of 3-manifolds

2018 1 15 15 00 - 16 30  
707

Thomas Koberda

Free products and diffeomorphisms of compact manifolds

2018 1 19 15 00 - 16 30  
701 ( )

Norbert A'Campo

Uniformisation by minimizing energy of curvature

### 広島数理解析セミナー

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2017 4 14 15 00 - 17 30  
B707

15 00 - 16 00

2 3 Boussinesq  
16 30 – 17: 30

212  
2017 5 12 16 30 – 17: 30  
B707

Remark on global regularity for the rotating Navier-Stokes equations in a periodic domain

213  
2017 6 2 16 30 – 17: 30  
B707

214  
2017 6 23 15 00 – 17: 30  
B707  
15 00 – 16 00

Bifurcation of Taylor vortex for compressible Navier-Stokes equations  
16 30 – 17: 30  
Jan Brezina  
On inviscid limit for Euler system with non-local interactions

215  
2017 6 30 16 30 – 17: 30  
B707  
Hamilton-Jacobi

216  
2017 7 14 16 30 – 17: 30  
E208

217  
2017 10 20 16 30 – 17: 30  
B707

218

2017 10 27 16:30 - 17:30

B707

Type II blow-up mechanisms in a semilinear heat equation with critical Joseph-Lundgren exponent

219

2017 11 24 16:30 - 17:30

B707

Loop-erased random walk

220

2017 12 8 16:30 - 17:30

B707

The Cauchy problem for semilinear damped wave equations

221

2018 2 2 16:30 - 17:30

B707

Yikan Liu

Unique continuation property with partial information for two-dimensional anisotropic elasticity systems

#### 広島複素解析セミナー

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WKB

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Normal forms of general dynamical systems and their integrability

広島確率論・力学系セミナー

2017 10 3 15:00 - 16:30  
B 7 B701

Exact laws of large numbers for independent Pareto random variables

広島統計グループ金曜セミナー

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: ( )  
: Multivariate stochastic volatility model with realized volatilities and pairwise realized correlations

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: C816  
: ( )  
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: 29 10 6 ( ), 15:00-16:00  
: C816  
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: C816  
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: C816  
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広島

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DS02R1

学術団体からの受賞実績

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Academia Sinica( ), 2017 7 5 7 13  
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图

#### 1-4-2 個人別の研究活動の概要, 発



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BPS

BPS

Jinwon Choi

Michel van Garrel

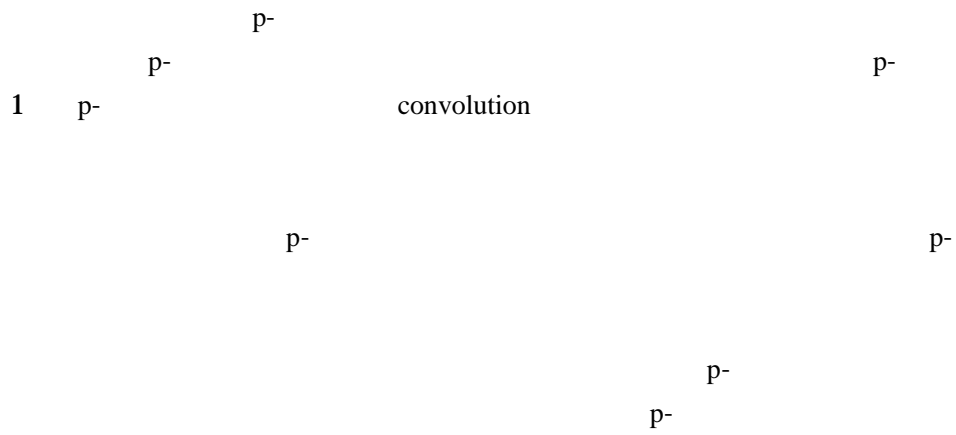
Sheldon Katz

○国際会議での講演

\_\_\_\_\_, Higher dimensional algebraic geometry, 2018 3 12- 3 16

官谷和尙 (助教)

○研究概要



○国際会議での講演

\_\_\_\_\_ The 11<sup>th</sup> conference on arithmetic and algebraic geometry, 2018 1 ,

○国内

○論文

Yu Iijima, Difference between  $l$ -adic Galois representations and pro- $l$  outer Galois representations associated to hyperbolic curves, Manuscripta Math. 153 (2017), no. 1-2, 129--145.

○国内学会での講演

( ) \_\_\_\_\_, in \_\_\_\_\_, 2018 3 14 15 ,

多様

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(4) 9 Universitat de Santiago de Compostela ( )

3

Langlands

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#### ○論文

Jong Taek Cho, Takahiro Hashinaga, Akira Kubo, Yuichiro Taketomi, Hiroshi Tamaru, The solvable models of noncompact real two-plane Grassmannians and some applications. In: Hermitian-Grassmannian Submanifolds, Springer Proc. Math. Stat. 203 (2017), 311--321.

Takahiro Hashinaga, Hiroshi Tamaru, Three-dimensional solvsolitons and the minimality of the corresponding submanifolds. Internat. J. Math. 28 (2017), 1750048 [31 pages].

#### ○国際会議で



Bruno Martelli (University of Pisa) shadow complexity  
 Heegaard  
 block copolymer material polycontinuous pattern  
 Saunbum Cho (Hanyang University) word length torus levelling number

○国際会議での講演

The mapping class groups of Heegaard splittings for 3-manifolds, Capital Normal University-Hiroshima University Joint conference on Mathematics  
 Extending automorphisms of the genus-2 surface over the 3-sphere, Topology Seminar at Chung-Ang University

○国内学会での講演

The disk complex and 2-bridge knots Graph

土井英雄 (准教授)

○研究概要

Tesselations  
 Modular orbifold cusps  
 cone points van Kampfen – Seifert  
 list up

Frick & Klein

Vorlesung über die Theorie der Modulfunktion

modular Orbifold 2-cell cut  
 list up  
 Tesselation Cayley graph Tesselations Klein  
 Algorithm monodromy

奥田隆幸 (助教)

○研究概要

$G$  Lie ,  $X$   $G$  ( ) ,  $(G,X)$ -  
( $G,X$ )-  $X$   $G$ -  
( $G,X$ )-  
 $G$  Lie  $L$   $X$   
 $G$  Lie ,  $X$   
 $L$   
,  $L$   $SL(2,R)$  ,  $L$   
 $L$   $SO(n,1)$   $SU(n,1)$   
,  $G$  real rank 2 ,  $X$   
 $L$  ( ) ( )  
, Dynkin index ,

○国際



## ○論文

Mishio Kawashita, Sufficient conditions for decay estimates of the local energy and a behavior of the total energy of dissipative wave equations in exterior domains, Hokkaido Mathematical Journal Vol. 46, No. 3, (2017) p.277–313.

Masaru Ikehata and Mishio Kawashita, Asymptotic behavior of the solutions for the Laplace equation with a large spectral parameter and the inhomogeneous Robin type conditions, Osaka Journal of Mathematics 55(2018), 117–163.

## ○国内学会での講演

\_\_\_\_\_, 65 \_\_\_\_\_, 2017 5 26 ,  
 ( )  
 \_\_\_\_\_, 649 , 2017 7 1 ,  
 55 N 1 2  
 \_\_\_\_\_, 2018 2018 2 2 , 2 2

吉野正史 (教授)

## ○研究概

(2) 2017 9 6

FASdiff17

“Blowup of semi linear hyperbolic equation and monomial summability of normalizing transformation”

(3) 2017 10 19

“Movable Singularity of Hamiltonian System and Blowup of Semi linear Wave Equation”

(4) 2017 11 19

“Movable singularity of Hamiltonian system and monomial summability”

#### ○論文

Masafumi Yoshino, Parametric Borel summability of partial differential equations of irregular singular type, G. Filipuk et al. (eds.), Analytic, Algebraic and Geometric Aspects of Differential Equations, Trends in Mathematics, (2017), 455-471.

Masafumi Yoshino, Parametric Borel summability for semilinear partial differential equation, RIMS Kokyuroku Bessatsu, B61, (2017), 237-253.

Masafumi Yoshino, Movable singularity of generalized Emden equation via Birkhoff reduction, RIMS Kokyuroku Bessatsu, (2018), .

Masafumi Yoshino, Monodromy of confluent hypergeometric system with two irregular singular points, , 2020, (2017), 129-136.

Masafumi Yoshino, Movable Singularity and Blowup of Semi linear Wave Equation, , (2018), .

#### ○国際会議での講演

\_\_\_\_\_ Blowup of semilinear hyperbolic equation and monomial summability of normalizing transformation FASdiff17 2017 9 , (Alcala )

滝本和広 (

Kazuhiro Takimoto, Some removability results for two classes of fully nonlinear PDEs,  
, 2017 9

Kazuhiro Takimoto, On a Bernstein type theorem for some types of parabolic Hessian  
equations, Capital Normal University-Hiroshima University Joint conference on Mathematics  
, 2017 9

平田賢太郎 (准教授)

○

- ・ Shingo Kamimoto and David Sauzin, Iterated convolutions and endless Riemann surfaces, to appear in Annali della Scuola Normale Superiore di Pisa, Classe di Scienze.

○国際会議での講演

- ・ Shingo Kamimoto, RIMS-iTHEMS international Workshop on Resurgence Theory, 2017  
9 6 ,
- ・ Shingo Kamimoto, - D , , , 2017  
11 19 ,

○国内学会での講演

- ・ , , 2017 11 4 , .

確率統計講座

井上昭彦 (教授)

○研究概要

Auto-Regressive Moving-Average  
ARMA 1  
ARMA ( -  
) ARMA - Journal of  
Mathematical Analysis and Applications 2018

○論文

A. Inoue, Y. Kasahara and M. Pourahmadi, Baxter's inequality for finite predictor coefficients of multivariate long-memory stationary processes, Bernoulli 24, (2018), 1202-1232.

○国内学会

statistic for additional information in canonical correlation analysis, Theory of Probability and Its Applications, 62(1), (2017), 194-211.

Nakagawa, T. and Wakaki, H. Selection of the linear and quadratic discriminant functions when the difference between two covariance matrices is small, J. Japan Statist. Soc., 47 (2), (2017), 145-165.

○国際会議での講演

Hirofumi Wakaki, “On a model selection criterion for a linear mixed model”, Capital Normal University – Hiroshima University Joint conference on Mathematics, 2017.9.21-22

○国内学会での講演

\_\_\_\_\_ , \_\_\_\_\_ , 67  
 , 2018 3 17 ,  
\_\_\_\_\_ , 2017 9 3 6 , \_\_\_\_\_ , 2017

柳原宏和 (

(2017), 124-140

○国内学会での講演

\_\_\_\_\_, Robustness to nonnormality on high-dimensionality-adjusted consistent generalized criterion for multivariate linear regression models, 2017, \_\_\_\_\_, 2017 9 4 6, \_\_\_\_\_.

\_\_\_\_\_, Equivalence between adaptive-Lasso and generalized ridge estimates in linear regression with orthogonal explanatory variables after optimizing regularization parameters, 2017, \_\_\_\_\_, 2017 9 4 6, \_\_\_\_\_.

\_\_\_\_\_, \_\_\_\_\_, 2017 \_\_\_\_\_, 2017 9 4 6, \_\_\_\_\_.

\_\_\_\_\_, Clustering of regional effects in apartment rents by fused Lasso, 12 \_\_\_\_\_, 2018 3 4, \_\_\_\_\_.

岩田耕一郎 (准)



\_\_\_\_\_ Robust estimation of location and scale parameters for skew-normal distribution using log-Pareto function (in Japanese), RIMS kokyuroku 2047 (2017) 67—76 ( )

○国際会議での講演

\_\_\_\_\_ Workshop for young scholars Control and inverse problems on waves, oscillations and flows- Mathematical analysis and computational methods - 2017 8

○国内学会での講演

_____	2017	6
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_____	RIMS	Statistical Inference and Modelling 2018 3

伊森

New Zealand (The University of Auckland, Auckland).

○国内学会での講演

9月, ( ). \_\_\_\_\_ & \_\_\_\_\_, 2017  
\_\_\_\_\_. \_\_\_\_\_ & \_\_\_\_\_. 2017 \_\_\_\_\_, 2017 9月,

総合

阿部 誠 (教授)

○研究概

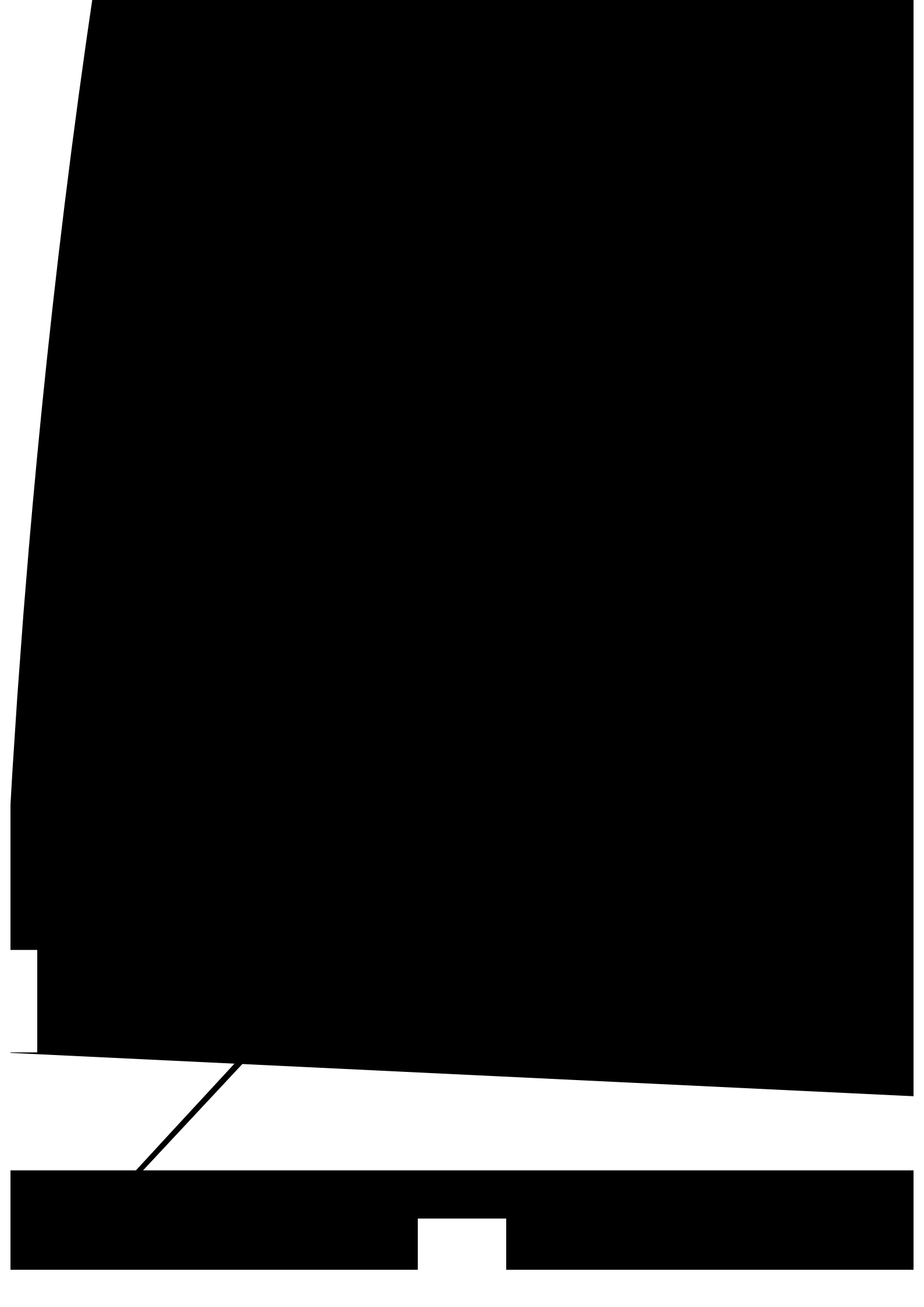
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○著書

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1-4-3 各種研究員と外国人留学生の受入状況

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1-4-4 研究助成金の受入状況

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1-4-5 学界ならびに社会での活動

○研究成果の社会への還元実績

○公開講座

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Behaviormetrika

Hiroshima Mathematical Journal

Hiroshima Mathematical Journal

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Hiroshima Mathematical Journal

Mathematical Reviews (American Mathematical Society) Reviewer

○講師

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A brief History of Hiroshima University and Atomic Bomb,

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### 2-3 学科の学士課程