

Proceedings of the 54th Symposium on Ring Theory and Representation Theory

September 6 (Tue.) – 9 (Fri.), 2022
Saitama University, Japan

Edited by
Naoko Kunugi
Tokyo University of Science

February, 2023
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第54回 環論および表現論シンポジウム報告集

2022年9月6日(火) – 9日(金)
埼玉大学

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Organizing Committee of The Symposium on Ring Theory and Representation Theory

The Symposium on Ring Theory and Representation Theory has been held annually in Japan and the Proceedings have been published by the organizing committee. The first Symposium was organized in 1968 by H. Tominaga, H. Tachikawa, M. Harada and S. Endo. After their retirement a new committee has been formed in 1997 to manage the Symposium, and its committee members are listed in the web page

<http://www.ring-theory-japan.com/ring/h-of-ringsymp.html>.

The present members of the committee are S. Kawata (Nagoya City Univ.), I. Kikumasa (Yamaguchi Univ.), I. Mori (Shizuoka Univ.), and T. Nishinaka (Univ. of Hyogo).

For information on ring theory and representation theory of groups and algebras (including schedules of meetings and symposiums), as well as ring mailing list service for registered members, please refer to the following websites, which are edited by K. Yamaura (Univ. of Yamanashi):

<http://www.ring-theory-japan.com/ring/> (in Japanese)

<http://www.ring-theory-japan.com/ring/japan/> (in English)

The Symposium in 2023 will be held at Osaka Metropolitan University from September 5 (Tue.) to September 8 (Fri.). The program organizer is K. Ueyama (Hirosaki Univ.), and the local organizer is R. Kanda (Osaka Metropolitan Univ.).

Shigeto Kawata
Nagoya, Japan
February, 2023

Contents

Preface	vi
Program (Japanese)	vii
Program (English)	x
A bijection between silting subcategories and bounded hereditary cotorsion pairs Takahide Adachi and Mayu Tsukamoto	1
On τ -tilting finiteness of group algebras Takuma Aihara and Taro Sakurai	7
Approximation by interval-decomposables and interval resolutions of 2D persistence modules Hideto Asashiba, Emerson G. Escobar, Ken Nakashima and Michio Yoshiwaki	11
A characterization of standard derived equivalences of diagrams of dg categories and their gluing Hideto Asashiba and Shengyong Pan	19
Connectedness of quasi-hereditary structures Yuichiro Goto	27
Noncommutative conics in Calabi-Yau quantum projective planes I, II Haigang Hu, Masaki Matsuno and Izuru Mori	32
Symmetric cohomology and symmetric Hochschild cohomology of cocommutative Hopf algebras Ayako Itaba, Yuta Shiba and Katsunori Sanada	40
Projective objects in the category of discrete modules over a profinite group Ryo Kanda	46
On the openness of loci over Noetherian rings Kaito Kimura	48
Combinatorics of quasi-hereditary structures Yuta Kimura	52
Tilting complexes over blocks covering cyclic blocks Yuta Kozakai	59

Relative stable equivalences of Morita type for the principal blocks of finite groups Naoko Kunugi and Kyoichi Suzuki	64
Categorical entropy of the Frobenius pushforward functor Hiroki Matsui	70
Characterization of 4-dimensional non-thick irreducible representations Kazunori Nakamoto and Yasuhiro Omoda	76
Localization of triangulated categories with respect to extension-closed subcategories Yasuaki Ogawa	84
A new framework of partially additive algebraic geometry Shingo Okuyama	91
Higher versions of morphisms represented by monomorphisms Yuya Otake	99
The reduction number of stretched ideals Kazuho Ozeki	103
The spectrum of Grothendieck monoid Shunya Saito	111
On IE-closed subcategories Arashi Sakai	117
On generalized Nakayama-Azumaya's lemma and the final report on Ware's problem Masahisa Sato	122
Dimitrov-Haiden-Katzarkov-Kontsevich complexities for singularity categories Ryo Takahashi	130
Twisted Segre products and noncommutative quadric surfaces Kenta Ueyama	136
Characterization of eventually periodic modules and its applications Satoshi Usui	142

Preface

The 54th Symposium on Ring Theory and Representation Theory was held at Saitama University on September 6th – 9th, 2022. The symposium and this proceedings are financially supported by

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We would also like to express our thanks to all the members of the organizing committee for their helpful suggestions concerning the symposium. Finally we would like to express our gratitude to Local organizer, Professor Akihiko Hida, and students of Shizuoka University and Tokyo University of Science who contributed in the organization of the symposium.

Naoko Kunugi

Tokyo, Japan

February, 2023

第54回環論および表現論シンポジウム プログラム

9月6日 (火)

9:50–10:20 木村 雄太 (大阪公立大学)

Combinatorics of quasi-hereditary structures

10:30–11:00 後藤 悠一郎 (大阪大学)

Connectedness of quasi-hereditary structures

11:10–11:40 エスカラ エマソン ガウ (神戸大学), 浅芝 秀人 (静岡大学, 京都大学, 大阪公立大学), 中島 健 (岡山大学), 吉脇 理雄 (大阪公立大学)

Approximation by interval-decomposables and interval resolutions of persistence modules

13:20–13:50 中本 和典 (山梨大学), 面田 康裕 (明石工業高等専門学校)

Characterization of 4-dimensional non-thick irreducible representations

14:00–14:30 鈴木 香一 (東京理科大学), 切刀 直子 (東京理科大学)

Relative stable equivalences of Morita type for the principal blocks of finite groups

14:40–15:10 小境 雄太 (東京理科大学)

Tilting complexes over blocks covering cyclic blocks

15:30–16:00 酒井 嵐士 (名古屋大学)

On IE-closed subcategories

16:10–16:40 相原 琢磨 (東京学芸大学), 櫻井 太郎 (千葉大学)

On τ -tilting finiteness of group algebras

9月7日 (水)

9:50–10:20 板場 綾子 (東京理科大学), 芝 勇太 (株式会社ユービーセキュア), 眞田 克典 (東京理科大学)

Symmetric cohomology and symmetric Hochschild cohomology of cocommutative Hopf algebras

10:30–11:00 臼井 智 (東京理科大学)

Characterization of eventually periodic modules and its applications

11:10–11:40 齋藤 峻也 (名古屋大学)

Grothendieck モノイドによる Serre 部分圏の分類

13:20–13:50 松野 仁樹 (静岡大学), 胡 海剛 (静岡大学), 毛利 出 (静岡大学)
Noncommutative conics in Calabi-Yau quantum projective planes I

14:00–14:30 Haigang Hu (静岡大学), 松野 仁樹 (静岡大学), 毛利 出 (静岡大学)
Noncommutative conics in Calabi-Yau quantum projective planes II

14:40–15:10 上山 健太 (弘前大学)
Twisted Segre products and noncommutative quadric surfaces

15:30–16:00 佐藤 眞久 (愛知大学)
中山・東屋の補題の一般化について

16:10–16:40 奥山 真吾 (香川高等専門学校)
A new framework of partially additive algebraic geometry

9月8日 (木)

9:50–10:20 本間 孝拓 (東京理科大学)
Covering theory of silting objects

10:30–11:00 榎本 悠久 (大阪公立大学)
The Grothendieck monoid of an extriangulated category

11:10–11:40 塚本 真由 (山口大学), 足立 崇英 (山口大学)
A bijection between silting subcategories and bounded hereditary cotorsion pairs

13:20–13:50 高橋 亮 (名古屋大学)
Dimitrov-Haiden-Katzarkov-Kontsevich complexities for singularity categories

14:00–14:30 松井 紘樹 (徳島大学)
Categorical entropy of the Frobenius pushforward functor

14:40–15:10 大関 一秀 (山口大学)
Stretched イデアルの節減数について

15:30–16:00 大竹 優也 (名古屋大学)
Higher versions of morphisms represented by monomorphisms

16:10–16:40 木村 海渡 (名古屋大学)
On the openness of loci over Noetherian rings

9月9日 (金)

9:50–10:20 浅芝 秀人 (静岡大学, 京都大学, 大阪公立大学), Shengyong Pan (Beijing Jiaotong University)

A characterization of standard derived equivalences of diagrams of dg categories and their gluing

10:30–11:00 小川 泰朗 (奈良教育大学)

Localization of triangulated categories with respect to extension-closed subcategories

11:10–11:40 神田 遼 (大阪公立大学)

Projective objects in the category of discrete modules over a profinite group

The 54th Symposium on Ring Theory and Representation Theory

Program

September 6 (Tuesday)

- 9:50–10:20** Yuta Kimura (Osaka Metropolitan University)
Combinatorics of quasi-hereditary structures
- 10:30–11:00** Yuichiro Goto (Osaka University)
Connectedness of quasi-hereditary structures
- 11:10–11:40** Emerson Gaw Escolar (Kobe University), Hideto Asashiba (Shizuoka University, Kyoto University, Osaka Metropolitan University), Ken Nakashima (Okayama University), Michio Yoshiwaki (Osaka Metropolitan University)
Approximation by interval-decomposables and interval resolutions of persistence modules
- 13:20–13:50** Kazunori Nakamoto (University of Yamanashi), Yasuhiro Omoda (National Institute of Technology, Akashi College)
Characterization of 4-dimensional non-thick irreducible representations
- 14:00–14:30** Kyoichi Suzuki (Tokyo University of Science), Naoko Kunugi (Tokyo University of Science)
Relative stable equivalences of Morita type for the principal blocks of finite groups
- 14:40–15:10** Yuta Kozakai (Tokyo University of Science)
Tilting complexes over blocks covering cyclic blocks
- 15:30–16:00** Arashi Sakai (Nagoya University)
On IE-closed subcategories
- 16:10–16:40** Takuma Aihara (Tokyo Gakugei University), Taro Sakurai (Chiba University)
On τ -tilting finiteness of group algebras

September 7 (Wednesday)

- 9:50–10:20** Ayako Itaba (Tokyo University of Science), Yuta Shiba (UBsecure, Inc.), Katsunori Sanada (Tokyo University of Science)
Symmetric cohomology and symmetric Hochschild cohomology of cocommutative Hopf algebras

- 10:30–11:00** Satoshi Usui (Tokyo University of Science)
Characterization of eventually periodic modules and its applications
- 11:10–11:40** Shunya Saito (Nagoya University)
Classifying Serre subcategories via Grothendieck monoid
- 13:20–13:50** Masaki Matsuno (Shizuoka University), Haigang Hu (Shizuoka University), Izuru Mori (Shizuoka University)
Noncommutative conics in Calabi-Yau quantum projective planes I
- 14:00–14:30** Haigang Hu (Shizuoka University), Masaki Matsuno (Shizuoka University), Izuru Mori (Shizuoka University)
Noncommutative conics in Calabi-Yau quantum projective planes II
- 14:40–15:10** Kenta Ueyama (Hirosaki University)
Twisted Segre products and noncommutative quadric surfaces
- 15:30–16:00** Masahisa Sato (Aichi University)
On generalized Nakayama-Azumaya's lemma
- 16:10–16:40** Shingo Okuyama (National Institute of Technology, Kagawa College)
A new framework of partially additive algebraic geometry

September 8 (Thursday)

- 9:50–10:20** Takahiro Honma (Tokyo University of Science)
Covering theory of silting objects
- 10:30–11:00** Haruhisa Enomoto (Osaka Metropolitan University)
The Grothendieck monoid of an extriangulated category
- 11:10–11:40** Mayu Tsukamoto (Yamaguchi University), Takahide Adachi (Yamaguchi University)
A bijection between silting subcategories and bounded hereditary cotorsion pairs
- 13:20–13:50** Ryo Takahashi (Nagoya University)
Dimitrov-Haiden-Katzarkov-Kontsevich complexities for singularity categories
- 14:00–14:30** Hiroki Matsui (Tokushima University)
Categorical entropy of the Frobenius pushforward functor
- 14:40–15:10** Kazuho Ozeki (Yamaguchi University)
The reduction number of stretched ideals
- 15:30–16:00** Yuya Otake (Nagoya University)
Higher versions of morphisms represented by monomorphisms

16:10–16:40 Kaito Kimura (Nagoya University)
On the openness of loci over Noetherian rings

September 9 (Friday)

9:50–10:20 Hideto Asashiba (Shizuoka University, Kyoto University, Osaka Metropolitan University), Shengyong Pan (Beijing Jiaotong University)
A characterization of standard derived equivalences of diagrams of dg categories and their gluing

10:30–11:00 Yasuaki Ogawa (Nara University of Education)
Localization of triangulated categories with respect to extension-closed subcategories

11:10–11:40 Ryo Kanda (Osaka Metropolitan University)
Projective objects in the category of discrete modules over a profinite group