

Proceedings of the 55th Symposium on Ring Theory and Representation Theory

September 5 (Tue.) – 8 (Fri.), 2023
Osaka Metropolitan University, Japan

Edited by
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February, 2024
Matsumoto, JAPAN

第55回 環論および表現論シンポジウム報告集

2023年9月5日(火) – 8日(金)
大阪公立大学

編集: 上山健太 (信州大学)

2024年2月
信州大学

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.), T. Nishinaka (Univ. of Hyogo) and K. Yamaura (Univ. of Yamanashi).

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:

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

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

The Symposium 2024 will be held at Tokyo Gakugei University in September. The program and local organizers are H. Nagase (Tokyo Gakugei Univ.) and T. Aihara (Tokyo Gakugei Univ.).

Shigeto Kawata
Nagoya, Japan
February, 2024

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Preface

The 55th Symposium on Ring Theory and Representation Theory was held at Osaka Metropolitan University on September 5th – 8th, 2023. The symposium was held with the support of

Osaka Central Advanced Mathematical Institute (OCAMI)
MEXT Joint Usage/Research Center on Mathematics and Theoretical
Physics JPMXP0619217849.

Furthermore the symposium and this proceedings are financially supported by

Izuru Mori (Shizuoka University)
JSPS Grant-in-Aid for Scientific Research (C) No. JP20K03510,
Kenta Ueyama (Shinshu University)
JSPS Grant-in-Aid for Scientific Research (C) No. JP22K03222,
Ryo Kanda (Osaka Metropolitan University)
JSPS Grant-in-Aid for Early-Career Scientists No. JP20K14288 and
MEXT Leading Initiative for Excellent Young Researchers.

This volume consists of the articles presented at the symposium. We would like to thank all speakers and coauthors for their contributions.

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 Ryo Kanda, the staff of OCAMI, and the students of Osaka Metropolitan University who contributed in the organization of the symposium.

Kenta Ueyama
Matsumoto, Japan
February, 2024

第55回環論および表現論シンポジウム (2023年) プログラム

9月5日 (火)

10:30–10:35 あいさつと諸注意

10:35–11:05 源 泰幸 (大阪公立大学)

On quiver Heisenberg algebras and the algebra $B(Q)$

11:20–11:50 多田 駿介 (神戸大学), 青木 利隆 (神戸大学), Emerson Gaw Escolar (神戸大学)

On interval global dimension of posets: a characterization of case 0

13:30–14:00 酒井 嵐士 (名古屋大学)

A classification of t-structures by a lattice of torsion classes

14:15–15:15 榎本 悠久 (大阪公立大学)

加群圏の構造のコンピュータ (FD Applet) による計算

15:45–16:15 小川 泰朗 (奈良教育大学), Amit Shah (Aarhus University)

K_0 of weak Waldhausen extriangulated categories

16:30–17:00 高橋 亮 (名古屋大学)

Resolving subcategories of derived categories

9月6日 (水)

9:50–10:20 大竹 優也 (名古屋大学)

Embeddings into modules of finite projective dimensions and the n -torsionfreeness of syzygies

10:35–11:05 木村 海渡 (名古屋大学)

The Auslander-Reiten conjecture for normal rings

11:20–11:50 大関 一秀 (日本大学)

The first Euler characteristic and the depth of associated graded rings

13:40–14:10 ニューフェイスによる自己紹介

14:15–15:15 齋藤 峻也 (名古屋大学)

Classifying several subcategories of the category of maximal Cohen-Macaulay modules

15:45–16:15 中村 力 (三重大学)

Govorov–Lazard type theorems, big Cohen–Macaulay modules, and Cohen–Macaulay hearts

16:30–17:00 平松 直哉 (呉工業高等専門学校)

The spectrum of the category of maximal Cohen-Macaulay modules

9月7日 (木)

9:50–10:20 齋藤 由宇 (静岡大学), 松野 仁樹 (東京理科大学)

Type P,S,T,WL の 3次元 3次 AS 正則代数の分類

10:35–11:05 板場 綾子 (東京理科大学)

Quantum projective planes and Beilinson algebras of 3-dimensional quantum polynomial algebras for Type S'

11:20–11:50 毛利 出 (静岡大学)

AS-regular \mathbb{Z} -algebras

13:30–14:00 臼井 智 (東京都立産業技術高等専門学校)

Periodic dimensions of modules and algebras

14:15–15:15 松野 仁樹 (東京理科大学)

Classification of twisted algebras of 3-dimensional Sklyanin algebras

15:45–16:15 中本 和典 (山梨大学), 鳥居 猛 (岡山大学)

The moduli of 4-dimensional subalgebras of the full matrix ring of degree 3

16:30–17:00 中嶋 祐介 (京都産業大学)

Wall-and-chamber structures of stability parameters for some dimer quivers

9月8日 (金)

9:50–10:20 小境 雄太 (東京理科大学), 小塩 遼太郎 (東京理科大学)

On inductions and restrictions of support τ -tilting modules over group algebras

10:35–11:05 浅井 聡太 (東京大学), 伊山 修 (東京大学)

Faces of certain neighborhoods of presilting cones

11:20–11:50 相原 琢磨 (東京学芸大学)

On trivial tilting theory

The 55th Symposium on Ring Theory and Representation Theory

Program

September 5 (Tuesday)

- 10:30–10:35** Opening remarks
- 10:35–11:05** Hiroyuki Minamoto (Osaka Metropolitan University)
On quiver Heisenberg algebras and the algebra $B(Q)$
- 11:20–11:50** Shunsuke Tada (Kobe University), Toshitaka Aoki (Kobe University),
Emerson Gaw Escobar (Kobe University)
On interval global dimension of posets: a characterization of case 0
- 13:30–14:00** Arashi Sakai (Nagoya University)
A classification of t-structures by a lattice of torsion classes
- 14:15–15:15** Haruhisa Enomoto (Osaka Metropolitan University)
Computation of the structure of module categories using FD Applet
- 15:45–16:15** Yasuaki Ogawa (Nara University of Education), Amit Shah (Aarhus University)
 K_0 of weak Waldhausen extriangulated categories
- 16:30–17:00** Ryo Takahashi (Nagoya University)
Resolving subcategories of derived categories

September 6 (Wednesday)

- 9:50–10:20** Yuya Otake (Nagoya University)
Embeddings into modules of finite projective dimensions and the n -torsionfreeness of syzygies
- 10:35–11:05** Kaito Kimura (Nagoya University)
The Auslander-Reiten conjecture for normal rings
- 11:20–11:50** Kazuho Ozeki (Nihon University)
The first Euler characteristic and the depth of associated graded rings
- 13:40 – 14:10** Self-introduction by newcomers
- 14:15–15:15** Shunya Saito (Nagoya University)
Classifying several subcategories of the category of maximal Cohen-Macaulay modules

15:45–16:15 Tsutomu Nakamura (Mie University)
Govorov–Lazard type theorems, big Cohen–Macaulay modules, and Cohen–Macaulay hearts

16:30–17:00 Naoya Hiramatsu (National Institute of Technology, Kure College)
The spectrum of the category of maximal Cohen-Macaulay modules

September 7 (Thursday)

9:50–10:20 Yu Saito (Shizuoka University), Masaki Matsuno (Tokyo University of Science)
The classification of 3-dimensional cubic AS-regular algebras of Type P,S,T and WL

10:35–11:05 Ayako Itaba (Tokyo University of Science)
Quantum projective planes and Beilinson algebras of 3-dimensional quantum polynomial algebras for Type S'

11:20–11:50 Izuru Mori (Shizuoka University)
AS-regular \mathbb{Z} -algebras

13:30 – 14:00 Satoshi Usui (Tokyo Metropolitan College of Industrial Technology)
Periodic dimensions of modules and algebras

14:15–15:15 Masaki Matsuno (Tokyo University of Science)
Classification of twisted algebras of 3-dimensional Sklyanin algebras

15:45–16:15 Kazunori Nakamoto (University of Yamanashi), Takeshi Torii (Okayama University)
The moduli of 4-dimensional subalgebras of the full matrix ring of degree 3

16:30–17:00 Yusuke Nakajima (Kyoto Sangyo University)
Wall-and-chamber structures of stability parameters for some dimer quivers

September 8 (Friday)

9:50–10:20 Yuta Kozakai (Tokyo University of Science), Ryotaro Koshio (Tokyo University of Science)
On inductions and restrictions of support τ -tilting modules over group algebras

10:35–11:05 Sota Asai (The University of Tokyo), Osamu Iyama (The University of Tokyo)
Faces of certain neighborhoods of presilting cones

11:20–11:50 Takuma Aihara (Tokyo Gakugei University)
On trivial tilting theory