Preface

The Workshop and 18th International Conference on Representations of Algebras (ICRA 2018) was held in Prague, Czech Republic, from August 8–17, 2018. It continued the long tradition of conferences dedicated to representation theory of associative algebras and related areas of mathematics started at Carleton University in Canada in 1974. The immediate predecessor, ICRA 2016, was held at Syracuse University, NY, USA, and the immediate successor, ICRA 2020, will be held at ICTP in Trieste, Italy, in July 2020.\footnote{Note Added in Proof: Due to the COVID-19 pandemic, ICRA 2020 will be held online, with the scheduled date of November 9–27, 2020.} Besides presenting main themes of contemporary representation theory, ICRA 2018 also brought in some new tools, such as stable ∞-categories, stable derivators, and contramodules. We are grateful to all the authors who provided their contributions to this volume, as well as the referees for their assistance.

ICRA 2018 started with a four-day Workshop presenting six lecture series of three hours each. These series were delivered by Pramod Achar (Louisiana State University) who spoke on Characters of Tilting Modules for Algebraic Groups, Silvana Bazzoni (University of Padua) speaking on Contramodules and Their Application in Tilting Theory, Serge Bouc (University of Picardie - Jules Verne) on Representations of Finite Sets and Correspondences, Giovanni Cerulli Irelli (The Sapienza University of Rome) on Quiver Grassmanians, Moritz Groth (University of Bonn) on Higher Symmetries in Abstract Stable Homotopy Theories, and Michael Weymyss (University of Glasgow) who spoke on Contraction Algebras: Properties, Prophecies and Predictions. Part I of the present volume consists of expanded lecture notes for the four lecture series delivered by Bazzoni, Bouc, Cerulli Irelli, and Groth.

The 18th International Conference on Representations of Algebras spanned the week of August 13–17 and consisted of 20 morning plenary talks followed by 135 afternoon contributed talks presented in six parallel sessions. Part II of the present volume consists of research papers based on six of the plenary talks, delivered by Karin Erdmann (University of Oxford), Ivo Herzog (Ohio State University), Gustavo Jasso (University of Bonn), Bernhard Keller (Université Paris Diderot), Markus Reineke (University of Bochum), and Andrea Solotar (University of Buenos Aires).

ICRA 2018 had about 250 participants coming from 34 countries. There were 52 graduate students participating; about half of them gave a talk at the Conference, including Sota Asai (University of Nagoya) whose talk was selected by the Scientific Committee as a plenary.
For more than ten years, ICRA has had the tradition of granting the ICRA Award to the best young scientists working in representation theory. In 2018, there were two awardees:

- Gustavo Jasso Ahuja from the University of Bonn, “for his fundamental contributions to \(\tau\)-tilting theory introducing the original methods of reduction, \(g\)-vectors, bricks, as well as his foundational work in higher Auslander-Reiten theory,” and
- Julian Külshammer from the University of Stuttgart, “for developing a new approach to quasi-hereditary algebras and Ringel duality in terms of regular bocses, with applications to exact Borel subalgebras and representation types of standard filtered categories, as well as for his study of higher Nakayama algebras.”

The Awards were announced at the beginning of the Conference and presented during the Conference banquet held at the Kaiserstein Palace in Prague.

ICRA 2018 would not take place without responsible work of members of several committees:

The Scientific Committee consisted of Lidia Angeleri Hügel (University of Verona), William Crawley-Boevey (Bielefeld University), Steffen Koenig (University of Stuttgart), Henning Krause (Bielefeld University), Bernard Leclerc (University of Caen Normandy), Idun Reiten (Norwegian University of Science and Technology), Changchang Xi (Capital Normal University, Beijing), Kunio Yamagata (Tokyo University of Agriculture and Technology), and Dan Zacharia (Syracuse University).

The Organizing Committee consisted of Jan Trlifaj (Charles University, Prague - chair), Jan Šťovíček (Charles University), Miroslav Korbelář (Czech Technical University, Prague), Pavel Průhon (Charles University), Pavel Růžička (Charles University), Jan Šaroch (Charles University), Jan Žemlička (Charles University), Alena Gollová (Czech Technical University) Pavel Pták (Czech Technical University), and Jiří Rosický (Masaryk University, Brno). The Committee appreciated the partnership of AMCA, the Academic and Medical Conference Agency (Prague), in organizing ICRA 2018. Special thanks are also due to Alexander Slávik (Charles University) and Michal Hrbek (Math. Inst., Czech. Acad. Sci.).”

The ICRA 2018 Award Committee consisted of Karin Erdmann (University of Oxford), Jan Schröer (University of Bonn), Jan Trlifaj (Charles University), Osamu Iyama (Nagoya University), and Dan Zacharia (Syracuse University).

ICRA 2018 was partially supported by a grant of the Neuron endowment fund, by project 17-23112S of the Grant Agency of the Czech Republic, by the “Support of Internationalization” project of Charles University, and by a grant of the RSJ Foundation. The Faculty of Electrical Engineering of the Czech Technical University and the Faculty of Mathematics and Physics of Charles University contributed by providing substantial discounts for rentals of the lecture halls. All of this support is gratefully appreciated.

Last but not least, this volume is dedicated to Professor Idun Reiten from the Norwegian University of Science and Technology, Trondheim, whose work has shaped modern representation theory of algebras.

Prague, January 2020

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