

PREFACE

The present volume contains 18 contributions by the participants of the “50th Seminar Sophus Lie”, which took place between September 26 and October 1, 2016, at the Conference Center in Będlewo, Poland near Poznań.

The conference was part of the programme of the Stefan Banach International Mathematical Center, but it was also the 50th jubilee meeting of the series *Seminar Sophus Lie*. This is a semi-annual seminar series on all branches of Lie theory and its applications. It was founded in Germany in 1989 as a means to create an environment to revive the communication between mathematicians in the eastern and western parts of Germany. The first meetings took place in Leipzig, Darmstadt, Greifswald and Erlangen. Its geographic range gradually expanded and by now it has grown to a real European event with sessions in France, Luxembourg, Hungary, Austria and Poland. For a detailed history we refer to the website

http://math-www.upb.de/user/hilgert/static/Seminare/Seminar_Sophus_Lie.html

The contents of the present book reflects the great breadth of modern Lie theory. We start with Karl Strambach’s historical article on the origins of Seminar Sophus Lie. The second article comes from Ernest Vinberg, who was awarded the title of Distinguished Speaker of the European Mathematical Society in 2016. The branches of Lie theory touched upon in this volume are

- algebraic groups (Vinberg, Caradot),
- groupoids and their connection to C^* -algebras (I. and D. Beltiță),
- Lie systems of vector fields and differential equations (Cariñena, Moreno),
- harmonic analysis on symmetric spaces (Faraut, Frahm, van Pruijssen),
- unitary representations and operator algebras (Neeb/Ólafsson),
- representations of Lie superalgebras (Mohammadi/Salmasian),
- infinite dimensional Lie theory (Nikitin),
- Lie groups and non-associative structures (Figula),
- global analysis (Kimaczyńska/Pierzchalski),
- σ -models (Grundland/Strasburger/Dziewa-Dawidczyk),
- differential geometry and generalizations (Bertram, Lewandowski/de Lucas),
- deformation quantization (Kiselev),
- categorification (Poncin).

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