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Automated Reasoning in Quantified Non-Classical Logics

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Preface

This volume contains the proceedings of the Fifth International Workshop on *Automated Reasoning in Quantified Non-Classical Logics* (ARQNL 2024), held July 1st, 2024, in Nancy, France. The workshop was affiliated and co-located with the *International Joint Conference on Automated Reasoning* (IJCAR 2024). The aim of the ARQNL 2024 Workshop has been to foster the development of proof calculi, automated theorem proving (ATP) systems and model finders for all sorts of quantified non-classical logics. The ARQNL workshop series provides a forum for researchers to present and discuss recent developments in this area.

Non-classical logics — such as modal logics, conditional logics, intuitionistic logic, description logics, temporal logics, linear logic, multivalued logic, dynamic logic, deontic logic, fuzzy logic, paraconsistent logic, relevance logic, free logic, natural logic — have many applications in Artificial Intelligence, Computer Science, Philosophy, Linguistics, and Mathematics. Hence, the automation of proof search in these logics is a crucial task. It is in particular the aim of the ARQNL workshop series to initiate and foster practical implementations and evaluations of such ATP systems for non-classical logics.

The ARQNL 2024 Workshop received eight paper submissions. Each paper was reviewed by at least three referees, and following an online discussion, all eight research papers were selected to be included in the proceedings. The ARQNL 2024 Workshop included invited talks by Didier Galmiche ("Separation Logics: Semantics and Proofs") and Amir Akbar Tabatabai ("On the Computational Content of Intuitionistic Modal Proofs").

We would like to sincerely thank the invited speakers, all authors for their contributions and all active participants of the ARQNL 2024 workshop. We would also like to thank the members of the Program Committee of ARQNL 2024 for their professional work in the reviewing process. Finally, we would like to acknowledge the support of the EasyChair conference management system.

Bamberg, Oslo and Groningen
July 2024

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Contents