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Automated Reasoning in Quantified Non-Classical Logics

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Preface

This volume contains the proceedings of the Second International Workshop on Automated Reasoning in Quantified Non-Classical Logics (ARQNL 2016), held July 1st, 2016, in Coimbra, Portugal. The workshop was affiliated and co-located with the International Joint Conference on Automated Reasoning (IJCAR 2016). The aim of the ARQNL 2016 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, dynamic logic, fuzzy logic, paraconsistent logic, relevance logic — have many applications in AI, Computer Science, Philosophy, Linguistics, and Mathematics. Hence, the automation of proof search in these logics is a crucial task. For many propositional non-classical logics there exist proof calculi and ATP systems. But proof search is significant more difficult than in classical logic. For first-order and higher-order non-classical logics the mechanization and automation of proof search is even more difficult. Furthermore, extending existing non-classical propositional calculi, proof techniques and implementations to quantified logics is often not straightforward. As a result, for most quantified non-classical logics there exist no or only few (efficient) ATP systems. 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 2016 Workshop received 6 paper submissions. Each paper was reviewed by at least three referees, and following an online discussion, 5 research papers were selected to be included in the proceedings. The ARQNL 2016 Workshop also included an invited talk by Revantha Ramanaya.

We would like to sincerely thank the invited speaker and all authors for their contributions. We would also like to thank the members of the Program Committee of ARQNL 2016 for their professional work in the review process. Furthermore, we would like to thank the Workshop Chair Reinhard Kahle and the Organizing Committee of IJCAR 2016. Finally, many thanks to all active participants of the ARQNL 2016 Workshop.

Berlin and Oslo, July 2016

Christoph Benzmüller
Jens Otten

Organization

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