

14th International Conference
on
Automated Deduction in Geometry

Book of Abstracts

Pedro Quaresma & Zoltán Kovács

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Welcome Address

This is the *book of abstracts* of the 14th International Conference on Automated Deduction in Geometry (ADG 2023).

ADG is a forum to exchange ideas and views, to present research results and progress, and to demonstrate software tools at the intersection between geometry and automated deduction. The conference is held every two years. The previous editions of ADG were held in Hagenberg in 2021 (online, postponed from 2020 due to COVID-19), Nanning in 2018, Strasbourg in 2016, Coimbra in 2014, Edinburgh in 2012, Munich in 2010, Shanghai in 2008, Pontevedra in 2006, Gainesville in 2004, Hagenberg in 2002, Zurich in 2000, Beijing in 1998, and Toulouse in 1996.

This year ADG 2023 includes the workshop *Deduction in Education* on the 20th of September. In total there are, three Invited Talks, one Guest Lecture and 21 regular talks.

The 14th edition, ADG 2023, is held in Belgrade, Serbia, 20–22 of September, 2023.

Contents

Welcome Address	iii
Programme	1
Invited Talks	3
Book of Abstracts	5
Solving with GeoGebra Discovery an Austrian Mathematics Olympiad problem: lessons learned (<i>Belén Ariño-Morera, Zoltán Kovács, Tomás Recio and Piedad Tolmos</i>)	5
Solving some geometry problems of the Náboj 2023 contest with automated deduction in GeoGebra Discovery (<i>Amela Hota, Zoltán Kovács and Alexander Vujic</i>)	6
The locus story of a rocking camel in a medical center in the city of Freistadt (<i>Eva Erhart, Anna Käferböck, Zoltán Kovács and Engelbert Zeintl</i>)	6
Using GXWeb for theorem proving and mathematical modelling (<i>Danny Aley and Philip Todd</i>)	6
Using Java Geometry Expert as guide in the preparations for math contests (<i>Ines Ganglmayr, Zoltán Kovács</i>)	7
Showing proofs, assessing difficulty with GeoGebra Discovery (<i>Zoltán Kovács, Tomás Recio and M. Pilar Vélez</i>)	7
3D space trajectories and beyond: abstract art creation with 3D printing (<i>Thierry Dana-Picard, Mathias Tejera and Eva Ulbrich</i>)	8
Deduction in Education: the Case of Serbia (<i>Bojan M. Tomić, Miloš Milovanović and Gordana Medić-Simić</i>)	8
Euclid’s theorems through the area method (<i>Anna Petiurenko</i>)	9
Open source prover in the attic (<i>Zoltán Kovács and Alexander Vujic</i>) . . .	9
Automation of Triangle Ruler-and-Compass Constructions Using Constraint Solvers (<i>Milan Banković</i>)	10
Automated Completion of Statements and Proofs in Synthetic Geometry: an Approach based on Constraint Solving (<i>Salwa Tabet Gonzalez, Predrag Janičić and Julien Narboux</i>)	10
Towards an Independent Version of Tarski’s System of Geometry (<i>Pierre Boutry, Stéphane Kastenbaum and Clément Saintier</i>)	11
Towards automated readable proofs of ruler and compass constructions (<i>Vesna Marinković, Tijana Šukilović and Filip Marić</i>)	11

Considerations on Approaches and Metrics in Automated Theorem Generation/Finding in Geometry (<i>Pedro Quaresma, Pierluigi Graziani and Stefano M. Nicoletti</i>)	12
Theorem Discovery amongst Cyclic Polygons (<i>Philip Todd</i>)	13
Automatic Transformations of Coq Proof Scripts—Work in Progress (<i>Nicolas Magaud</i>)	13
Geometrically Analyzing the Equilibria of Parametric Biochemical Networks Admitting Linear Conservation Laws: Case Studies (<i>Changbo Chen and Wenyuan Wu</i>)	14
Improving Angular Speed Uniformity by Piecewise Radical Reparameterization (<i>Hoon Hong, Dongming Wang and Jing Yang</i>)	14
The Companion and Bézout Subresultants of Two Bernstein Polynomials (<i>Mei Tan and Jing Yang</i>)	15
Automated proof of Ramsey theorem via symbolic computation (<i>Jian Lu, Zhenbing Zeng and Liangyu Chen</i>)	15
Author Index	17

3D space trajectories and beyond: abstract art creation with 3D printing

20 Sept
16:30
Hotel Palace

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We present simple models of trajectories in space, both in 2D and in 3D. The first examples, which model bicircular moves in the same direction, are classical curves (epicycloids, etc.). Then, we explore bicircular moves in reverse direction and tricircular moves. The exploration is followed by 3D printing. Students' activities are organized around this exploration.

Keywords: Space curves • models of orbits • Animations • 3D printing.

Deduction in Education: the Case of Serbia

20 Sept
17:00
Hotel Palace

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The main goal of the paper is to provide insight into the current state of education in Serbia regarding the use of educational aspects of software related to deduction, geometry and mathematical reasoning. Authors investigate to what extent and for what purposes teachers and students use such software. The consideration of the current state is substantiated by the examples of teaching practices at different school levels, and supplemented by the proposals which tend to contribute to deeper understanding of the topic. The most commonly used automatic deduction and calculation programs in Serbian education are GeoGebra, Photomath, Microsoft Math Solver, Desmos, and Wolfram Alpha. These mathematical software represent an advantageous topic for cross-curricular connection in schools which could be realized in many different ways. It is suggested in the context of connecting mathematics and physics to art, history of science, national history of science, philosophy, logic and psychology.

Keywords: Cross-curricular Connection • GeoGebra • Education.
