Curriculum vitae of Peter Zeman

Basic information

- *Born:* 13/12/1993, Levice, Slovakia
- *E-mail:* `zeman@kam.mff.cuni.cz`
- *Phone:* (+420) 735 524 538
- Student of Faculty of Mathematics and Physics, Charles University in Prague.
- Currently PhD student at the Department of Applied Mathematics from October of 2016. The expected month of defense is December of 2021.
- PhD Thesis – Groups of automorphisms of graphs.
- Master degree at Charles University from October of 2014 until September of 2016.
- Master's Thesis – Algebraic, Structural and Complexity Aspects of Geometric Representations of Graphs.
  (`http://kam.mff.cuni.cz/~pizet/masters_thesis.pdf`)
- Bachelor degree at Charles University from October of 2011 until September of 2014.
- Bachelor's Thesis – Automorphism Groups of Geometrically Represented Graphs.
  (`http://kam.mff.cuni.cz/~pizet/bachelors_thesis.pdf`)
- Programming experience with C, C++, C#, Python.

Language skills

- Fluent in Slovak and English.

Current research areas

- Graph thoery, geometric representations of graphs
- algebraic graph theory, graph isomorphism problem, automorphism groups of graphs, topological graph theory,
- theoretical computer science, algorithms.

Research visits

- May – July 2015: Research experience for undergraduates at Rutgers University, DIMACS
- July 2017: University of Würzburg, Steven Chaplick.
- October 2017: Bergen University, Fedor Fomin.
- March – June 2018: Graduate student at University of Oregon hosted by Prof. Eugene Luks.
- December 2018: Simon Fraser University, Prof. Bojan Mohar.
- November 2019: National Institute of Informatics, Japan, Ken-ichi Kawarabayashi.

Teaching experience

- Charles University: linear algebra (2014 –), mathematical analysis (2016, 2020), discrete mathematics (2015, 2018, 2021), complex analysis (2015), probability and statistics (2021), abstract algebra (2021).
- University of Oregon: Intermediate algorithms (2018).

Prizes

- Prize of Jiří Matoušek 2017 for the paper "*Automorphism groups of geometrically represented graphs*" – prize for doctoral students of Department of Applied Mathematics of the Faculty of Mathematics and Physics at the Charles University.

- Best student paper award at 43rd International Workshop on Graph-Theoretic Concepts in Computer Science for the paper "On H-topological intersection graphs".
- The Best Teaching Assistant of the Computer Science Section of the Faculty of Mathematics and Physics of Charles University in 2018/2019 for Discrete Mathematics (voted by students).
- The winner of The Best Student Talk Award at the 9th PhD Summer School in Discrete Mathematics held in Rogla, Slovenia, from June 30th until July 6th 2019 (`https://conferences.famnit.upr.si/event/12/page/7-best-student-talk-award`).
- Prize of Jiří Matoušek 2020 for the paper "*Automorphisms and isomorphisms of maps in linear time*" – prize for doctoral students of Department of Applied Mathematics of the Faculty of Mathematics and Physics at the Charles University.

Journal papers

1. Steven Chaplick, and Peter Zeman: *Combinatorial Problems on H-graphs*. Electronic Notes in Discrete Mathematics. September 2017.
2. Pavel Klavík, Dušan Knop, Peter Zeman: *Graph isomorphism restricted by lists*. Theoretical Computer Science. January 2021.
3. Ken-ichi Kawarabayashi, Pavel Klavík, Bojan Mohar, Roman Nedela, and Peter Zeman: *Isomorphism of maps on the sphere*. Volume "Polytopes and Discrete Geometry" of Contemporary Mathematics, American Mathematical Society. January 2021.
4. Steven Chaplick, Fedor V. Fomin, Petr A. Golovach, Dušan Knop, and Peter Zeman: *Kernelization of Graph Hamiltonicity: Proper H-graphs*. SIAM Journal of Discrete Mathematics. April 2021.
5. Steven Chaplick, Martin Töpfer, Jan Voborník, and Peter Zeman: *On H-Topological Intersection Representations of Graphs*. Algorithmica. June 2021.
6. Pavel Klavík, and Peter Zeman: *Automorphism Groups of Geometrically Represented Graphs*. Currently being revised in Ars Mathematica Contemporanea.
7. Pavel Klavík, Roman Nedela, Peter Zeman: *Jordan-like characterization of automorphism groups of planar graphs*. Currently being revised in Journal of Combinatorial Theory, Series B.

Conference proceedings

1. Pavel Klavík, and Peter Zeman: *Automorphism Groups of Geometrically Represented Graphs*. 32nd International Symposium on Theoretical Aspects of Computer Science (STACS). March 2015.
2. Steven Chaplick, Martin Töpfer, Jan Voborník, and Peter Zeman: *On H-Topological Intersection Representations of Graphs*. International Workshop on Graph-Theoretic Concepts in Computer Science (WG). June 2017.
3. Steven Chaplick, Fedor V. Fomin, Petr A. Golovach, Dušan Knop, and Peter Zeman: *Kernelization of Graph Hamiltonicity: Proper H-graphs*. Workshop on Algorithms and Data Structures (WADS). August 2019.
4. Pavel Klavík, Dušan Knop, and Peter Zeman: *Graph Isomorphism Restricted by Lists*. International Workshop on Graph-Theoretic Concepts in Computer Science (WG). June 2020.
5. Ken-ichi Kawarabayashi, Bojan Mohar, Roman Nedela, and Peter Zeman: *Automorphisms and Isomorphisms of Maps in Linear Time*. International Colloquium on Automata, Languages and Programming (ICALP). July 2021.

Submitted

1. Vít Kalisz, Pavel Klavík, and Peter Zeman: *Circle Graph Isomorphism in Almost Linear Time*. Submitted to SIAM Symposium on Simplicity in Algorithms (SOSA).
2. Jiří Fiala, Ignaz Rutter, Peter Stümpf, Peter Zeman: *Extending Partial Representations of Circular-Arc Graphs*. Submitted to ACM-SIAM Symposium on Discrete Algorithms (SODA).

3. Kenta Ozeki, Peter Zeman: *Characterization of extended star graphs by asteroidal k-tuples*. Submitted to Discrete Mathematics.
4. Peter Zeman: *Automorphism groups of subclasses of planar graphs*. Submitted to Discrete Mathematics.
5. Steven Chaplick, Peter Zeman: *Isomorphism-completeness for H-graphs*. Submitted to Discrete Mathematics.
6. Roman Nedela, Ilia Ponomarenko, and Peter Zeman: *Testing isomorphism of chordal graphs of bounded leafage is fixed-parameter tractable*. Submitted to STACS.