



Martha Łącka (Ubik)

Curriculum Vitae

Education:

- 2014– **PhD Studies in Pure Mathematics**, Jagiellonian University, Kraków.
- 2012–2014 **Master Studies in Pure Mathematics**, Jagiellonian University, Kraków.
final grade: very good
- 2009–2012 **Bachelor Studies in Pure Mathematics**, Jagiellonian University, Kraków.
final grade: very good
- 2009–2012 **Bachelor Studies in Economy**, Jagiellonian University, Kraków.
final grade: very good
- 2006–2009 **II Liceum Ogólnokształcące im. Króla Jana III Sobieskiego**, Kraków.
profile: Mathematics and Physics

Publications:

Refereed Journal Publications:

- Dominik Kwietniak, Martha Łącka, Piotr Oprocha **Generic Points for Dynamical Systems with Average Shadowing**, Accepted to: Monatshefte für Mathematik.
- Dominik Kwietniak, Martha Łącka, **A Note on the Complexity Function and Entropy of Pseudogroups**, J MATH ANAL APPL vol. 48 (2016), 523-532.
- Dominik Kwietniak, Martha Ubik, **Topological entropy of compact subsystems of transitive real line maps**, Dyn. Sys. 28 (2013), no. 1, pp. 62–75.
- Dominik Kwietniak, Martha Łącka, Piotr Oprocha, **A panorama of specification-like properties and their consequences**, Dynamics and Numbers, Contemporary Mathematics, vol. 669 155-186, (2016).

Submitted

- M. Łącka, M. Pietrzyk, **Quasi-uniform Convergence in Dynamical Systems Generated by an Amenable Group Action**.
- D. Kwietniak, M. Łącka, **Royal nonhyperbolic measures are loosely Kronecker: an application of the Feldman-Katok pseudometric**.

Conference Materials:

1. **Entropy for single automorphisms** — extended abstract in Oberwolfach Reports, Report No. 50/2013, DOI: 10.4171/OWR/2013/50, Arbeitsgemeinschaft: Sofic Entropy, str. 2923-2926.
2. **On the Connection Between the Hausdorff Dimension and Bowen's Definition of Topological Entropy** — „15th International Workshop for Young Mathematicians 'Ergodic Theory and Dynamical Systems' ” .
3. **Applications of the Singular Value Decomposition**, a poster in „14th International Workshop for Young Mathematicians 'Algebra' ”, Kraków 2012, ISBN: 978-83-929547-3-6.

Expository Articles:

1. **Daktyloskopia okiem matematyka** — Matematyka-Społeczeństwo-Nauczanie, nr 1/2014, ISSN 2354-0362 (in Polish).
2. **Gra Grim i twierdzenie Sprague-Grundy'ego** (co-author: M. Łącki), magazyn matematyczno-fizyczno-informatyczno-astronomiczny „Delta”, VI 2014r. (in Polish).
3. **Oszacowanie sumy długości przekątnych**, magazyn matematyczno-fizyczno-informatyczno-astronomiczny „Delta”, styczeń 2010r. (in Polish),
4. **Wokół środka ciężkości**, „Matematyka”, V 2009r. wyd. Edupress (in Polish),
5. **Punkty charakterystyczne na prostej Eulera**, magazyn matematyczno-fizyczno-informatyczno-astronomiczny „Delta”, I 2009 (in Polish).

Grants:

- National Science Centre grant **Preludium** (pre-doctoral grant for beginner researchers) — a project: *Topological and Ergodic Properties of Dynamical Systems with Specification-like Properties* (July 2016 – July 2018)
- Polish Ministry of Science and Higher Education grant **Diamentowy Grant** — *Entropy of maps of the non-compact spaces, sofic groups actions and the holonomy pseudogroups* (July 2013 – July 2015).

Internships

Internship in **Warsaw Center of Mathematics and Computer Science** — 2015/2016.

Conferences:

International, with a talk/a poster:

- **51st Spring Topology and Dynamical Systems Conference**, a talk: *The Weyl Pseudometric for Dynamical Systems Generated by an Amenable Group Actions*, Jersey City, New Jersey, USA, 8-11 III, 2017,
- **Wandering Seminar**, a talk: *The Weyl Pseudometric for Dynamical Systems Generated by an Amenable Group Actions*, Wrocław, Poland, 2-5 III, 2017,
- **Combinatorics on Words, Calculability, Automata**, a talk: *The Weyl pseudometric and the Krieger Theorem*, Marseille, France, 30 I - 3 II, 2017,
- **Applications of Ergodic Theory in Number Theory**, a poster: *The Weyl Pseudometric*, Marseille, France, 17-21 X 2016,
- **Czech-Slovak Workshop of Discrete Dynamical Systems**, a talk: *Complexity Function and Entropy of Pseudogroups*, Karlova Studianka, Czech Republic, 12-16 IX 2016,
- **31st Summer School on Topology and its Applications**, a talk: *Quasi-uniform convergence in dynamical systems generated by amenable group actions*, Leicester, England, 2-5 VIII 2016,

- **Wandering Seminar – A Mini Conference on Ergodic Theory and Dynamical Systems**, a talk: *Complexity Function and Entropy of Pseudogroups*, Warszawa, Poland, 1–3 IV 2016,
- **Wandering Seminar – A Mini Conference on Ergodic Theory and Dynamical Systems**, a talk: *Generic Points and the Besicovitch Pseudometric*, Wrocław, Poland, 23–26 IV 2015,
- **The Sixth Visegrad Conference Dynamical Systems**, a poster: *Besicovitch Pseudometric, Weyl Pseudometric and their Applications*, Prague, Czech Republic, 6–19 VII 2015,
- **Joint Meeting of the German Mathematical Society (DMV) and the Polish Mathematical Society (PTM)**, a talk: *On Specification-like Properties and Simplices of Invariant Measures of Dynamical Systems*, Poznań, Poland, 17–20 IX 2014,
- **Ergodic Theory and Dynamical Systems Conference**, a poster: *On Simplices of Invariant Measures of Dynamical Systems with Specification-like Properties*, Toruń, Poland, 12–16 V 2014,
- **Wandering Seminar Ergodic Theory & Dynamical Systems**, a talk: *Shannon Entropy*, Kraków, Poland, 23–26 I 2014,
- **Arbeitsgemeinschaft „Sofic Entropy”**, a talk: *Entropy of Single Automorphisms*, Oberwolfach, Germany, 6–11 X 2013,
- **Visegrad Conference on Dynamical Systems**, a talk: *Canovas-Rodriguez Entropy of Transitive Real Line Maps*, Olsztyn, Poland, 2–6 IX 2013,
- **28th Summer Conference on Topology and its Applications**, a talk: *Topological Entropy of Compact Subsystems of Transitive Real Line Maps*, North Bay, Canada, 23–26 VII 2013,
- **Biological Complexity in Cracow**, a poster: *DNA and Knots Theory* (co-author: M. Pietrzyk), Kraków, Poland, 10–12 V 2013

Student and Expository Conferences:

- **53. Szkoła Matematyki Poglądowej**, a talk: *Co to jest punkt generyczny? (What Does it Mean to be a Generic Point?)*, Kraków, 16–18 X 2015,
- **18th International Workshop for Young Mathematicians**, a talk: *Entropy and Dynamics of Hyperbolic Measures*, Kraków, 13–18 IX 2015,
- **XIV Międzyuczelniana Naukowa Sesja Studencka**, a talk: *Dynamika symboliczna nad grupami mierzalnymi (Symbolic Dynamics in the Context of Amenable Groups)*, Kraków, 2015,
- **XIII Międzyuczelniana Naukowa Sesja Studencka**, a talk: *Entropia w przykładach (Entropy in examples)*, Kraków, 30 V – 1 VI 2014,
- **XII Międzyuczelniana Naukowa Sesja Studencka**, a talk: *Cisnienie topologiczne (Topological Pressure)*, Kraków, 22–24 XI 2013,
- **XVI International Workshop for Young Mathematicians „Ergodic Theory and Dynamical Systems”**, a talk: *On the Connection Between the Hausdorff Dimension and Bowen’s Definition of Topological Entropy*, Kraków, 15–21 IX 2013,
- **51. Szkoła Matematyki Poglądowej**, a talk: *Daktyloskopia okiem matematyka (Daktyloscopy from the Mathematical Point of View)*, Nadarzyn, 30 VIII – 1 IX 2013,
- **III Studencka Konferencja Matematyczno-Informatyczno-Biologiczna „Liczby-Komputery-Życie”**, a poster *Teoria węzłów a DNA (Knot Theory and DNA)* (coauthor: M. Pietrzyk), second prize in the poster competition, Kraków, 19–21 IV 2013,
- **XI Międzyuczelniana Naukowa Sesja Studencka**, a talk: *O szukaniu szczęścia w nieporządku, czyli o podkowach topologicznych (Topological Horseshoes)* and a talk: *O węźle, który zjadł swój ogon, czyli kilka słów o foliacjach (Foliations)*, Kraków, 18–20 I 2013,
- **XV International Workshop for Young Mathematicians „Functional Analysis”**, a poster: *Antiunitary Operators*, Kraków, 8–14 VII 2012,
- **X Międzyuczelniana Naukowa Sesja Studencka**, a talk: *Kategoria Lusternika - Schnirelmann*

- (*The Lusternik-Schnirelmann Category*), Kraków, 18–20 V 2012,
- **II Studencka Konferencja Matematyczno-Informatyczno-Biologiczna „Liczby-Komputery-Życie”**, introductory lecture and a poster: *Rozwłóknienie Hopfa i niezmiennik Hopfa oraz ich związek z biologią (The Hopf Fibration and the Hopf Invariants and their Connections with Biology)*, Kraków, 13–15 IV 2012,
 - **IX Międzyuczelniana Naukowa Sesja Studencka**, a talk: *Rozmaitości centralne (The Central Manifolds)*, Kraków, 9–1 XII 2012,
 - **XIV International Workshop for Young Mathematicians „Algebra”**, a poster *Applications of the Singular Value Decomposition*, Kraków, 10–16 VII 2011,
 - **VIII Międzyuczelniana Naukowa Sesja Studencka**, a talk: *Co łączy Eulera, Simsona, Nagela i Lemoine’a? (Euler’s, Simson’s, Nagel’s and Lemoine’s lines)*, Kraków, 4 XII 2010,
 - **III Kongres Młodych Matematyków Polskich**, a talk: *O pewnym problemie geometrycznym (About some geometric Problem)*, Kraków, 19 IX 2010,
 - **VII Międzyuczelniana Naukowa Sesja Studencka**, a talk: *O twierdzeniu Carnota (The Carnot Theorem)*, Kraków, 24 IV 2010,
 - **VI Międzyuczelniana Naukowa Sesja Studencka**, a talk: *Oszacowanie sumy długości przekątnych (The Estimation of the sum of diagonals’ lengths)*, Kraków, 20 XI 2009,
 - **Quasinarium Jesienne**, a talk: *O okręgach Lemoine’a (Lemoine Circles)*, Ujsoły, 13–15 XI 2009,
 - **V Sympozjum Matematycznych i Informatycznych Kół Naukowych**, a talk: *Punkty charakterystyczne na prostej Eulera (The characteristic Points on the Euler’s Line)*, Kraków, 22–25 IX 2008

————— Honors and Awards:

Scholarships:

- Michał Łysek Memorial Award for the best young mathematician at the Jagiellonian University in Krakow (2016),
- Franciszek Leja Scholarship (2013r.),
- Polish Minister of Science and Higher Education for Outstanding Students Scholarship (2010/11, 2011/12, 2013/14),
- Jagiellonian University in Kraków Rector’s Team Award (2010/11– 2016/17),
- Scholarship of the organization „Sapere Auso” (2007/08, 2013/14),
- Polish Minister of National Education Scholarship for Outstanding Students (2009/10),
- participant of the scholarship program of Polish Children’s Fund (2006–2009).

Competitions:

- First Prize in **National Level of European Union Contest for Young Scientists** (2010r.),
- participating in **international level of European Union Contest for Young Scientists** (Lizbona, 2010r.),
- Second Prize in **National Level of European Union Contest for Young Scientists** (2009r.),
- Finalist of the Polish Mathematical Olympiad, 2009.

————— Selected Other Activities:

- co-leader of a **mathematical circle** for primary school pupils (2011/12, 2012/13, 2013/14, 2016/17),
- co-leader of a **mathematical circle** for middle school pupils (2016/17),
- a member of **the Zarembo Society of Mathematicians - Students of the Jagiellonian**

- University** — co-organizer of the variety of events (e.x. students conferences),
- leading excercises sessions during the workshop for teenagers organized by **Polish Children's Fund** and Jagiellonian University in Kraków (2011, 2012, 2014, 2015, 2016, 2017),
 - leading mathematical circle for 9-11 years old children during the summer camp organized by the **Łowcy Talentów Jersz** company (Serpelice, 2007).

Language Skills:

- **German** — certificate Deutsches Sprachdiplom C1,
- **English** — completed course PRE-CAE (C1).