

CONTACT DATA

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EDUCATION

Ph.D. Degree University of Gdansk. Faculty of Mathematics, Physics and Informatics.
Thesis: "Invariants for Local Codimension-Two Surface Moves"

LECTURES AT RESEARCH SEMINARS (OUTSIDE ALMA MATER)

- 08.09.2023: "Isotopic immersions of surfaces and Kirby moves", Osaka Central Advanced Mathematical Institute, Japan
- 07.11.2022: "Moves on immersions of surfaces into four-space", Tulane University in New Orleans, USA
- 16.04.2021: "Triple-crossing diagrams of knots", Greater Washington Topology Seminar, USA
- 16.01.2015: "On a monoid associated to knotted surfaces", University of Texas at Dallas, USA
- 04.12.2012: "Marked diagrams of surfaces in the four-dimensional space", George Washington University, USA

SCIENTIFIC TRAVELS (FOR AT LEAST A WEEK)

- Attended by the invitation to Extended KOOK Seminar (Hyogo University), 19-26.08.2024, Himeji in Japan
- Attended by the invitation to Osaka Metropolitan University, 08-19.09.2023, Osaka in Japan
- Attended by the invitation to ICERM: "Braids in Low-Dimensional Topology", 21-30.04.2022, Providence, RI in USA
- Attended by the invitation to Oberwolfach Seminar: "Combinatorial and Geometric Knot Theory", 21-27.11.2021, Oberwolfach in Germany

- Internship, project PWP IDSMM: University of Texas at Dallas, 05-19.01.2015, Dallas in USA
- By the invitation of The George Washington University, 13-26.03.2012, Washington D.C. in USA

POSITIONS HELD

- University of Gdansk, Institute of Mathematics, 01.10.2013 to present, *Assistant Professor*
- University of Warsaw, Institute of Mathematics, 01.07.2015 to 30.06.2016, *Assistant Professor*

INTERNATIONAL CONFERENCES ATTENDED (OUTSIDE ALMA MATER)

- "E-KOOK Seminar", 20-23.08.2024, Himeji in Japan, talk: *"CWR invariant of alternating knots and its properties"*.
- "Knots in Gdansk III", 17-19.06.2019, Gdansk in Poland, talk: *"Yoshikawa eighth move and a minimal set of band moves"*.
- "Knots in Gdansk II", 14-15.06.2018, Gdansk in Poland, talk: *"Hard marked graph diagrams for knotted surfaces in the four space"*.
- "Knots in Gdansk I", 10-11.07.2017, Gdansk in Poland, talk: *"Properties of marked graph diagrams presenting surface-links"*.
- "Knots in Washington XLIII", 09-11.12.2016, Washington in USA, talk: *"On an algebraic description of marked braid diagrams for surface-links"*.
- "Glances at Manifolds II", 08-13.08.2016, Krakow in Poland.
- "Knots in Hellas 2016", 16-23.07.2016, Olympia in Greece, poster presentation: *"Braid and flat banded link forms of marked graph diagrams for surface-links"*.
- The 18th International Workshop for Young Mathematicians "Algebraic and Differential Topology", 13-18.09.2015, Krakow, talk: *"Depicting a codimension-two smooth embeddings of surfaces"*.
- "Geometric Singularity Theory", 06-11.09.2015, Warsaw.
- "Glances at Manifolds - low and high dimensional", 17-20.07.2015, Krakow in Poland, talk: *"A view of knotted surfaces by a number and a position of its critical points"*.
- "30th Summer Conference on Topology and its Applications", 22-26.06.2015, Galway in Ireland.
- "Conference on Knot Theory and Its Applications to Physics and Quantum Computing", 06-09.01.2015, Richardson, Texas in USA, talk: *"A singular braid monoid associated to knotted surfaces"*.
- "DMV-PTM Mathematical Meeting", 17-20.09.2014, Poznan in Poland, talk: *"A singular braid view to knotted surfaces"*.

- "Geometry and topology of smooth 4-manifolds", 03-07.06.2013, Bonn in Germany.
- "Knots in Washington XXXV", 07-09.12.2012, Washington in USA, talk: *"On a monoid associated to knotted surfaces in special form"*.
- "6th European Congress of Mathematics", 02-07.07.2012, Krakow in Poland, talk: *"Linked surfaces and different singularity set of their projections"*.
- "1080 AMS Eastern Sectional Meeting", 17-18.03.2012, Washington in USA.
- "Knots in Washington XXXIV", 14-16.03.2012, Washington in USA.
- "Swiss Knots 2011", 23-27.05.2011, Thun in Switzerland.
- "Knots in Poland III", 18.07-04.08.2010, Warsaw-Bedlewo in Poland, talk: *"Knotted surfaces and equivalencies of their diagrams without triple points"*.

LIST OF PUBLICATIONS

- M. Jabłowski, CWR sequence of invariants of alternating links and its properties, *J. Knot Theory Ramifications*, Vol. 33 (2024) 2450052.
- M. Jabłowski, Rigid and shaky hard link diagrams, *preprint* (2024).
- M. Jabłowski, On a computation of the skein tree depth of knots and links, *preprint* (2024).
- M. Jabłowski, A polynomial pair invariant of alternating knots and links, *J. Knot Theory Ramifications*, Vol. 33 (2024) 2450048.
- M. Jabłowski, Minimal generating sets of moves for surfaces immersed in the four-space, *J. Knot Theory Ramifications*, Vol. 32 (2023) 2350071.
- M. Jabłowski, Upper and lower bound on delta-crossing number and tabulation of knots up to four delta-crossings, *Asian-European Journal of Mathematics*, Vol. 16 (2023) 2350110.
- M. Jabłowski, Tabulation of knots up to five triple-crossings and moves between oriented diagrams, *Tokyo Journal of Mathematics*, Vol. 46 (2023) 213-230.
- M. Jabłowski, Minimal generating set of planar moves for surfaces embedded in the four-space, *J. Knot Theory Ramifications*, Vol. 30 (2021) 2150062.
- M. Jabłowski, Triple-crossing number, the genus of a knot or link and torus knots, *Topology and its Applications*, Vol. 285 (2020) 107389.
- M. Jabłowski, Independence of Yoshikawa eighth move and a minimal generating set of band moves, *Fundamenta Mathematicae*, Vol. 251 (2020) 183–193.

- M. Jabłonowski and Ł. Trojanowski, Triple-crossing projections, moves on knots and links, and their minimal diagrams, *J. Knot Theory Ramifications*, Vol. 29 (2020) 2050015.
- M. Jabłonowski, Minimal hard surface-unlink and classical unlink diagrams, *J. Knot Theory Ramifications*, Vol. 28 (2019) 1940002.
- M. Jabłonowski, Presentations and representations of surface singular braid monoids, *Journal of the Korean Mathematical Society*, Vol. 54 (2017) 749-762.
- M. Jabłonowski, On a banded link presentation of knotted surfaces, *J. Knot Theory Ramifications*, Vol. 25 (2016) 1640004.
- M. Jabłonowski, On a surface singular braid monoid, *Topology and its Applications*, Vol. 160 (2013).
- M. Jabłonowski, Knotted surfaces and equivalencies of their diagrams without triple points, *J. Knot Theory Ramifications*, Vol. 21 (2012) 1250019.

TEACHING EXPERIENCE

- *Mathematical modeling of 3D graphics* Bachelor's seminar for MMAD
- *Computer graphics for mathematicians*, for: Mathematics, MMAD
- *Numerical algorithms*, for Mathematics
- *Theory of knots and links* Bachelor's seminar for Mathematics
- *Combinatorial theory of diagrams* Bachelor's seminar for MMAD
- *Data visualization*, for MMAD (lectures and computer labs)
- *Mathematical Analysis I and II*, for: Computer Science, Medical Physics, Biotechnology
- *Mathematics*, for: Chemistry, Management, Logistics, Spatial Development, Environmental Protection, Geology, Chemical Business, Oceanography
- *Linear algebra*, for: Mathematics, Computer Science
- *Geometry with topology*, for Economical Mathematics
- *Introduction to programming*, for Computer Science
- *Practice of teaching Informatics*, for Mathematics
- *Information technology*, for Philology (computer labs)

UNIVERSITY SERVICE AND SKILLS

- Chairman of the Faculty Recruitment Committee
- co-organizer of the conference "Knots in Gdansk" I, II and III
- Year tutor for students of mathematics
- Faculty Council member Faculty of Mathematics, Physics and Informatics of UG
- Stipend Council member for Ph.D. students of UG
- Preparation, in the \LaTeX system, of the monograph *Knot theory and distributive sets associated to it*, published by UG (2012). Extended second edition published (2016).
- Languages skills: Polish, English
- Good Programming/Using skills: Python, Wolfram/Mathematica, SageMath, Inkscape, Blender
- Certified qualifications to teach mathematics in English

HONORS AND AWARDS

- Rector's award (in 2024)
- Postdoctoral research fellowship at the Warsaw Center of Mathematics and Computer Science
- Top scholarships of the University of Gdansk in every year of Ph.D. studies
- Honorable mention at International Mathematics Competition for University Students
- 1st Award from the Rector of the University of Gdansk, while at master studies
- First place at IX small Polish Mathematical Olympiad
- First place at XX Voivodeship Mathematical Competition
- Laureate of Intervoivodeship Mathematical Competition
- Honorable mention at the final of the LI Polish Mathematical Olympiad
- Finalist of the L Polish Mathematical Olympiad

GRANTS AWARDED

- PI: Research grant NCN 2023/07/X/ST1/00157 (2023) "Isotopy of surfaces immersed in the four-space"
- PI: Research grant "Granty na granty" (2020) "Invariants and semi-invariants for knots surface from Yoshikawa moves"
- PI: Research grant BW 538-5100-B297-16 (2016) "Set of independent generators for moves of equivalent marked diagrams"
- PI: Research grant BW 538-5100-B854-15 (2015) "Relationship between words in a monoid SSB and types of linked surfaces"
- PI: Research grant BW 538-5100-B155-13 (2013) "Monoid of singular surface braids"
- PI: Research grant BW 538-5100-0968-12 (2012) "Algebraic distinguish of knotted surfaces"
- PI: Research grant BW 538-5100-0628-1 (2011) "Types of surface knots"
- Grant researcher BW 5107-5-0343-0 (2010) "Classical knots and higher dimensional knots"

EXPOSITORY ACTIVITIES (IN POLISH)

- 10.02.2024. Udział w organizacji zawodów II stopnia Olimpiady Matematycznej.
- 17.12.2022. Przygotowanie i przeprowadzenie "Kółka olimpijskiego z matematyki" w programie Zdolni z Pomorza
- 11.03.2017, 03.12.2016. Przygotowanie ćwiczeń, laboratoriów oraz wygłoszenie wykładu pt. „Powierzchnie” w programie Zdolni z Pomorza
- 13/14.03.2015. Wykład: „W świecie płaszczaków”, na Pomorską Noc Matematyki UG
- 21.05.2014. Wykład: „Rozcinanie z sklejanie różności”, dla Koła Naukowego Matematyki UG

SCRIPTS/BOOKS

- M. Jabłonowski, Węzły i sploty w wymiarze 3 i 4 (2024), 205 pp (in Polish).

REVIEWS COMPLETED

- for *Mathematics (MDPI)*: 1 (2024)
- for *Geometriae Dedicata*: 1 (2024)
- for *Algebraic & Geometric Topology*: 2 (2023)
- for *Fundamenta Mathematicae*: 1 (2023)
- for *Mediterranean Journal of Mathematics*: 1 (in 2022)
- for *Kyungpook Mathematical Journal*: 1 (in 2019)
- for *J. Knot Theory Ramifications*: 1 (in 2018), 1 (in 2022)
- for *Turkish Journal of Mathematics*: 1 (in 2018), 1 (2024)
- for *Mathematical Reviews*: 30 (in 2014-2018), 7 (in 2019-2020), 4 (in 2022)
- for *Zentralblatt MATH*: 4 (in 2017-2018), 9 (in 2019-2020)

SUPERVISING AND MENTORING STUDENTS

- the number of supervised students with completed a Bachelor's degree: 30

last modified: December, 2024