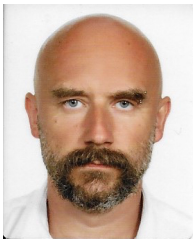
Curriculum Vitæ



Rafał Roman Suszek, *Ph.D.*

Personal data

Rafał Roman Suszek

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Date of birth: October 21st, 1977
Birthplace: Puławy, woj. lubelskie
Identity: Polish-Jewish-Ukrainian-Lithuanian-Belarus-Tatar-Armenian-Roma (*i.e.*, Respublican)
Citizenship: Polish
Marital status: married to Marta Anna Hallay-Suszek (since 2003)
Children: 1 Son (age: 8)
Languages: Polish, English, Ukrainian (fluent);
French, German (very good);
Russian (passive); Hebrew (rudimentary)
Other interests: - theory and practice of frontidarchy, action directe, civil disobedience, anti-nationalism & anti-racism, anti-fascism & anti-rashism;
- Polish, Jewish and Ruthenian culture and history;
- literature (modern prose, historiography), in particular modern Japanese and Southern American; Eurasian cinematography;
- critical cartography (in the sense of J.B. Harley) and cartosemiotics (in the sense of D. Wood and J. Fels), with emphasis on the cartography of the I Republic in the XV-XIX centuries;
- jazz, classical and ethnic music (listening), djembe (playing);
- œnology, tinctures (preparation); Polish, Jewish, Ukrainian, Indian, Arabic, Japanese and African cuisine;
- mountaineering, skiing, weight lifting, biking, equestrianism, sabre fencing, sailing

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Mathematical-physical Genealogy

Master: Krzysztof Gawędzki (discipleship & collaboration: 2005 - 2022†)

Research interests

differential-cohomological structures (fibre bundles, bundle gerbes, n-gerbes etc.); supergeometry and supersymmetry; non-commutative geometry and the associated gauge field theory; Lie-, loop-, Poisson–Lie- and quantum-group theory (geometry, algebra & cohomology), generalised (complex) geometry; (higher) category theory; categorified symmetries and dualities in geometry and field theory, in particular, Lie-groupoidal models of symmetry and the associated gauge theories; topological quantum field theory; geometric and deformation quantisation; (generalised) Ricci flow; conformal field theory; geometry of non-linear sigma models; mathematical aspects of string theory; field theories with defects; matrix models; models of gravity with torsion; integrability

Collaborations

Current

11/2023 - Bucharest Group on Geometry and Physics (Institutul Naţional de Cercetare-Dezvoltare pentru Fizică şi Inginerie Nucleară "Horia Hulubei" and Institutul de Matematică "Simion Stoilow" as Academiei Române, Bucureşti, România)

Project(s): Gerbes and T-duality for sigma-models with defects; Self-dual formulations of supergravity theories coupled to higher rank abelian gauge fields

11/2023 - **Calin I. Lazaroiu** (Departamento de Matemáticas Fundamentales, Facultad de Ciencias, Universidad Nacional de Educación a Distancia, Madrid, España & Institutul Naţional de Cercetare-Dezvoltare pentru Fizică şi Inginerie Nucleară "Horia Hulubei", Bucureşti, România)

Project(s): Gerbes and T-duality for sigma-models with defects; Self-dual formulations of supergravity theories coupled to higher rank abelian gauge fields

10/2023 - **CA22113 – Fundamental challenges in theoretical physics (THEORY-CHALLENGES)** (COST European Cooperation in Science and Technology)

Project(s): Gerbes and T-duality for sigma-models with defects; Self-dual formulations of supergravity theories coupled to higher rank abelian gauge fields

7/2023 - **CA21109 CaLISTA – Cartan geometry, Lie, Integrable Systems, quantum group – Theories for Applications** (COST European Cooperation in Science and Technology)

Project(s): Higher supergeometry with supersymmetry

12/2022 - **Thomas Strobl** (Institut Camille Jordan, Université Claude Bernard Lyon 1, France)

Project(s): The gauge principle for Lie-groupoidal symmetries

Past

2009 - 2010 **Christoph Schweigert** (Bereich Algebra und Zahlentheorie, Fachbereich Mathematik, Universität Hamburg, Hamburg, Germany)

Project(s): Defects in $2d$ CFT – gerbe-theoretic structures and functorial quantisation

2007 - 2012 **Ingo Runkel** (Department of Mathematics, Faculty of Natural, Mathematical & Engineering Sciences, King's College London, London, UK and Bereich Algebra und Zahlentheorie, Fachbereich Mathematik, Universität Hamburg, Hamburg, Germany)

Project(s): Defects in $2d$ CFT – gerbe-theoretic structures and functorial quantisation; Maximally symmetric defects in the WZW σ-model

2006 - 2012 **Konrad Waldorf** (Institut für Mathematik und Informatik, Universität Greifswald, Greifswald, Germany)

Project(s): Higher geometry in string theory; The gauge principle for the $2d$ non-linear σ-model with defects

2005 - 2022† **Krzysztof Gawędzki** (Laboratoire de Physique, École Normale Supérieure de Lyon, Lyon, France)

Project(s): Higher geometry in string theory; The gauge principle for the $2d$ non-linear σ-model with defects; Higher-geometric perspective on T-duality (and the rest of it)

2004 - 2008 **Andreas Recknagel** (Department of Mathematics, Faculty of Natural, Mathematical & Engineering Sciences, King's College London, London, UK)

Project(s): Emergent spectral non-commutative geometry and the associated gerbe-twisted effective gauge field theory in string theory

2005 **Harold Steinacker** (Fakultät für Physik, Universität Wien, Wien, Austria)

Project(s): Quantum group-theoretic structures in effective gauge field theories on WZW Dirichlet branes

2001 - 2006 **Jacek Pawełczyk** (Instytut Fizyki Teoretycznej, Wydział Fizyki, Uniwersytet Warszawski, Warszawa, Poland)

Project(s): Emergent non-commutative geometry and the associated effective gauge field theory in string theory; Quantum group-theoretic structures in effective gauge field theories on WZW Dirichlet branes

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Affiliations and hitherto employment

9/2010 -	Katedra Metod Matematycznych Fizyki, Wydział Fizyki, Uniwersytet Warszawski, Poland (Assistant Professor)
10/2009 - 9/2010	Bereich Algebra und Zahlentheorie, Department Mathematik, Universität Hamburg, Germany (wissenschaftlicher Mitarbeiter)
9/2008 - 11/2008	The Erwin Schrödinger International Institute for Mathematical Physics, Wien, Austria (Junior Research Fellow)
11/2007 - 10/2009	Department of Mathematics, King's College London, UK (Research Associate)
10/2006 - 9/2007	Laboratoire de Physique, École Normale Supérieure de Lyon, France (Post-doc ANR)
11/2005 - 9/2006	Laboratoire de Physique, École Normale Supérieure de Lyon, France (EUCLID Post-doctoral Fellow)
8/2005	Department of Mathematics, King's College London, UK (Marie Curie Fellow)
7/2004 - 1/2005	Department of Mathematics, King's College London, UK (Marie Curie Fellow)
10/2001 - 9/2005	Katedra Teorii Cząstek i Oddziaływań Elementarnych, Instytut Fizyki Teoretycznej, Wydział Fizyki, Uniwersytet Warszawski (Ph.D. fellow)

Short scientific visits

1-12/11/2024	The Erwin Schrödinger International Institute for Mathematics and Physics, Wien, Austria (invitation from Prof. Dr. Thomas Strobl)
21/7-3/8/2024	Institutul Naţional de Cercetare-Dezvoltare pentru Fizică şi Inginerie Nucleară "Horia Hulubei", Bucureşti, Romania (invitation from Prof. Dr. Calin I. Lazaroiu)
19-31/5/2024	Institut Camille Jordan, Université Claude Bernard Lyon 1, Lyon, France (invitation from Prof. Dr. Thomas Strobl)
16-29/5/2023	Institut Camille Jordan, Université Claude Bernard Lyon 1, Lyon, France (invitation from Prof. Dr. Thomas Strobl)
8-22/8/2022	The Erwin Schrödinger International Institute for Mathematics and Physics, Wien, Austria (invitation from Prof. Dr. Thomas Strobl)
13-26/9/2020	The Erwin Schrödinger International Institute for Mathematics and Physics, Wien, Austria (invitation from Prof. Dr. Thomas Strobl)
27-31/1/2019	Bereich Algebra und Zahlentheorie, Fachbereich Mathematik, Universität Hamburg, Hamburg, Germany (invitation from Prof. Dr. Christoph Schweigert)
13-20/5/2013	Institut de Mathématiques de Bourgogne, Dijon, France (invitation from Dr. Karol K. Kozłowski)
14-22/9/2012	Department für Physik, Ludwig-Maximilians-Universität München, Germany (invitation from Dr. Nils Carqueville)

11-17/12/2011 Laboratoire de Physique, École Normale Supérieure de Lyon, France (scientific collaboration with Prof. Dr. hab. Krzysztof Gawędzki & Dr. Konrad Waldorf)

25/10-2/11/2009 Laboratoire de Physique, École Normale Supérieure de Lyon, France (scientific collaboration with Prof. Dr. hab. Krzysztof Gawędzki & Dr. Konrad Waldorf)

23-30/4/2009 Albert-Einstein-Institut, Golm, Germany (invitation from Dr. Stefan Fredenhagen)

23-25/3/2009 Laboratoire de Physique, École Normale Supérieure de Lyon, France (scientific collaboration with Prof. Dr. hab. Krzysztof Gawędzki)

27/11-4/12/2008 Laboratoire de Physique, École Normale Supérieure de Lyon, France (scientific collaboration with Prof. Dr. hab. Krzysztof Gawędzki)

10-22/3/2008 Laboratoire de Physique, École Normale Supérieure de Lyon, France (scientific collaboration with Prof. Dr. hab. Krzysztof Gawędzki & Dr. Konrad Waldorf)

Publications, preprints and theses

After 2009

XXVI R.R.S., *"A Cartan tale of the orbifold superstring"*, Proceedings of the XII International Symposium on Quantum Theory and Symmetries, Praha, 24-28 July 2023, Journal of Physics: Conference Series (accepted for publication, in production).

XXV R.R.S., *"Equivariant Cartan–Eilenberg supergerbes, the Kostelecký-Rabin defect and descent to the Rabin-Crane superorbifold"*, arXiv preprint 2306.14045 [hep-th] (42 pages).

XXIV R.R.S., *"Towards higher super-σ-model categories"*, Proceedings of the 34th International Colloquium on Group Theoretical Methods in Physics, Strasbourg, 18-22 July 2022, SciPost Phys. Proc. 14, 044 (2023).

XXIII R.R.S., *"On symmetric simplicial (super)string backgrounds, (super-)WZW defect fusion and the Chern–Simons theory"*, arXiv preprint 2208.05312 [hep-th] (106 pages).

XXII R.R.S., *"Higher Supergeometry for the Super-σ-Model"*, Rev. Roumaine Math. Pures Appl. **66** (2021) 347–417.

XXI R.R.S., *"The higher-algebraic skeleton of the superstring – a case study"*, arXiv preprint 2102.08202 [hep-th] (55 pages).

XX R.R.S., *"The square root of the vacuum. I. Equivariance for the κ-symmetry superdistribution"*, arXiv preprint 2002.10012 [hep-th] (102 pages).

XIX R.R.S., *"Equivariant Cartan-Eilenberg supergerbes for the Green-Schwarz superbranes II. Equivariance in the super-Minkowskian setting"*, arXiv preprint 1905.05235 [hep-th] (91 pages).

XVIII R.R.S., *"Equivariant prequantisation of the super-0-brane in $\mathrm{AdS}_2 \times \mathbb{S}^2$ – a toy model for supergerbe theory on curved spaces"*, arXiv preprint 1810.00856 [hep-th] (39 pages).

XVII R.R.S., *"Equivariant Cartan-Eilenberg supergerbes for the Green-Schwarz superbranes III. The wrapping anomaly and the super-$\mathrm{AdS}_5 \times \mathbb{S}^5$ background"*, arXiv preprint 1808.04470 [hep-th] (50 pages).

XVI R.R.S., *"Equivariant Cartan-Eilenberg supergerbes for the Green-Schwarz superbranes I. The super-Minkowskian case"*, arXiv preprint 1706.05682 [hep-th] (81 pages).

XV R.R.S., *"Gauge Defect Networks in Two-Dimensional CFT"*, in: "Symmetries and Groups in Contemporary Physics, Proceedings of The XXIXth International Colloquium on Group-Theoretical Methods in Physics, Chern Institute of Mathematics, August 20-26, 2012", Nankai Series in Pure, Applied Mathematics and Theoretical Physics, 2013, World Scientific (pp. 411–416).

XIV R.R.S., *"Defects, dualities and the geometry of strings via gerbes, II. Generalised geometries with a twist, the gauge anomaly and the gauge-symmetry defect"*, arXiv preprint 1209.2334 [hep-th] (95 pages).

XIII K. Gawędzki, R.R.S., and K. Waldorf, *"The gauging of two-dimensional bosonic sigma models on world-sheets with defects"*, Rev. Math. Phys. **25** (2013) 1350010 (122 pages).

XII R.R.S., *"The Gerbe Theory of the Bosonic Sigma-Model: The Multi-phase CFT, Dualities, and the Gauge Principle"*, Acta Phys. Pol. B Proc. Suppl. **4** (2011) 425–460.

XI R.R.S., *"Defects, dualities and the geometry of strings via gerbes, I. Dualities and state fusion through defects"*, arXiv preprint 1101.1126 [hep-th] (61 pages).

X K. Gawędzki, R.R.S., and K. Waldorf, *"Global gauge anomalies in the two-dimensional bosonic sigma model"*, Commun. Math. Phys. **302** (2011) 513–580.

IX I. Runkel and R.R.S., *"Affine su(2) fusion rules from gerbe 2-isomorphisms"*, J. Diff. Geom. **61** (2011) 1527–1552.

VIII I. Runkel and R.R.S., *"Gerbe-holonomy for surfaces with defect networks"*, Adv. Theor. Math. Phys. **13.4** (2009) 1137–1219.

VII K. Gawędzki, R.R.S., and K. Waldorf, *"Bundle gerbes for orientifold sigma models"*, Adv. Theor. Math. Phys. **15.3** (2011) 621–688.

Before 2009

VI R.R.S., *"The Reshetikhin–Turaev Construction – an Example of TQFT"*, in: Arbeitsgemeinschaft mit aktuellem Thema: "Algebraic Structures in Conformal Field Theories", Oberwolfach Reports vol. 4, 2007, EMS Publishing House (pp. 971–975).

V K. Gawędzki, R.R.S., and K. Waldorf, *"WZW orientifolds and finite group cohomology"*, Commun. Math. Phys. **284** (2008) 1–49.

IV A. Recknagel and R.R.S., *"Non-commutative Weitzenböck geometry, gerbe modules, and WZW branes"*, JHEP **0802** (2008) 089.

III J. Pawełczyk and R.R.S., *"Brane bulk couplings and condensation from REA fusion"*, JHEP **0604** (2006) 009.

II J. Pawełczyk, H. Steinacker, and R.R.S., *"Twisted WZW branes from twisted REA's"*, Nucl. Phys. (PM) **B724** (2005) 487–502.

I J. Pawełczyk and R.R.S., *"Quantum matrix models for simple current orbifolds"*, Nucl. Phys. (PM) **B710** (2005) 599–613.

PhD R.R.S., *"Quantum Wess–Zumino–Novikov–Witten Branes"*, Ph.D. Thesis defended at the Faculty of Physics, University of Warsaw (October 6th, 2005; in English).

MSc R.R.S., *"Struktury Geometrii Nieprzemiennej w Teorii Strun"*, M.Sci. Thesis defended at the Faculty of Physics, University of Warsaw (July 5th, 2001; in Polish).

Papers in writing and preparation

XXVII T. Strobl and R.R.S., *"Principaloid bundles"*, in writing (to appear by the end of 2024).

XXVIII (K. Gawędzki and) R.R.S., *"T-duality: Gerbes, defects, and all that"*, in preparation.

Books and lecture notes

II	R.R.S., „Elementy Algebry i Geometrii Wyższej w Fizyce" – a textbook on higher-algebraic, -geometric and -categorial aspects of field theory (from Clifford algebras and spinors, through the theory of fibre bundles with connection, incl. Clifford and spinor bundles over riemannian manifolds, and the fibre-bundle description of the gauge principle, the Aharonov–Bohm and Higgs effects, all the way to the cohomological description of n-gerbes, the categorial foundations of topological quantum field theory, the Lie-superalgebraic formulation of (extended) supersymmetry and (spectral) noncommutative geometry), based on a three-semester monographic lecture course for physicists; available on-line, 720 pages – in writing
I	N. Carqueville, P. Sułkowski and R.R.S. (eds.), "The Advanced School on Topological Quantum Field Theory, Warszawa, December 7-9 2015", Banach Center Publications Vol. 114, 2018, proceedings volume of the Advanced School on Topological Quantum Field Theory
2012/2013	"Algebra. Podstawy" – notes from the first-year lecture course on algebra for individual students („Algebra IE" and „Algebra IIE"); available on-line, 355 pages – in writing
2010 - 2017	notes for the tutorial classes on algebra and analysis (available on-line)

Refereeing and reporting – journals

Journal of Physics, SIGMA, Journal of Mathematical Physics, Annales de l'Institut Henri Poincaré, Journal of Generalized Lie Theory and Applications, Journal of High Energy Physics, Physical Review Letters, Reports on Mathematical Physics; Mathematical Reviews

Refereeing and reporting – theses

9/2023	Jakub Filipek – B.A. thesis in physics at Inter-faculty Individual Studies in Mathematics and Natural Sciences at the University of Warsaw (supervisor: Prof. Dr. Hab. Krzysztof Meissner)

Lectures and talks

14-16/11/2024	*Gauge Symmetries & Their Higher Analogons*, invited lectures at The Bucharest 2024 Mini-School "Mathematical Methods in Gravitation & Cosmology", CERN–SEENET-MTP–ICTP PhD Training Programme, Bucureşti, Romania
25/6/2024	*Novel Oïdeas about The Good Old Gauging*, GAP Seminar, Bucureşti, Romania
17/4/2024	*1001 Tricks with Character(s) – a Case for Simplicial Mechanics Stiched by Categorified Correspondences*, The Trans-Carpathian Seminar on Geometry and Physics, Warszawa, Poland
27/7/2023	*A twisted Soul in a plain Body – a Cartan–Borel tale for the Green–Schwarz superstring*, invited talk at the XXVII. International Conference on Integrable

Systems and Quantum Symmetries, Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague, Czechia

17/5/2023 *À la Recherche de l'Âme Tordue*, Séminaire "Géométrie et Physique mathématique" de l'Équipe Algèbre, Géométrie, Logique, Institut Camille Jordan, Université Claude Bernard Lyon 1, France

24/8/2022 *An Air on the $\mathcal{G}_{\mathrm{GS}}$-superstring. A (physicist's) Categorical Approach to Supersymmetry*, invited talk at the workshop "Geometric Structures and Supersymmetry 2022", Universitetet i Tromsø – Norges arktiske universitet, Tromsø, Norway

19/7/2022 *Towards higher super-σ-model categories*, invited talk at the XXXIV International Colloquium on Group-Theoretical Methods in Physics, Université de Strasbourg, Strasbourg, France

13/1/2021 *The KGB (and the rest of the alphabet) for The Brane New Superworld*, Seminar "Methods of Geometry in Physics", Katedra Metod Matematycznych Fizyki, Wydział Fizyki, Uniwersytet Warszawski, Poland

17/9/2020 *The higher supergeometry of the super-σ-model*, invited talk at the ESI Thematic Programme "Higher Structures and Field Theory", The Erwin Schrödinger International Institute for Mathematical Physics, Wien, Austria

5/9/2019 *Geometrisation in supersymmetry-invariant cohomology – supergerbes, κ-symmetry, İnönü–Wigner contractions and all that*, Bucharest Conference on Geometry and Physics, Simon Stoilow Institute of the Romanian Academy, Bucharest, Romania

3/6/2019 *Geometrisation of the supersymmetry-invariant cohomology on homogeneous spaces of Lie supergroups*, The 2^{nd} JNMP Conference on Nonlinear Mathematical Physics: 2019, Centro de estudios de postgrado y educación continua, Universidad de Santiago de Chile, Chile

29/1/2019 *Geometrisation in the supersymmetry-invariant cohomology – from superstrings to supergerbes, & back*, Research seminar, Bereich Algebra und Zahlentheorie, Fachbereich Mathematik, Universität Hamburg, Germany

29/11/2018 *Contractible κ-symmetric supergerbes on homogeneous spaces of Lie supergroups*, Seminar "Theory of Duality", Katedra Metod Matematycznych Fizyki, Wydział Fizyki, Uniwersytet Warszawski, Poland

18/5/2017 *On supergerbes for the Green–Schwarz supermembranes*, Seminar "Theory of Duality", Katedra Metod Matematycznych Fizyki, Wydział Fizyki, Uniwersytet Warszawski, Poland

27/3/2015 *(Higher) Categories for the working physicist*, Research Seminar on Category Theory, Wydział Matematyki, Informatyki i Mechaniki, Uniwersytet Warszawski, Poland

21/11/2013 *Categorial quantisation: From topological invariants to RCFT*, Seminar "Theory of Duality", Katedra Metod Matematycznych Fizyki, Wydział Fizyki, Uniwersytet Warszawski, Poland

7,14,28/11/2013 *Quantum (field) theory as a functor – Part I, II, III*, The Thursday Colloquium "The Algebra & Geometry of Modern Physics", Katedra Metod Matematycznych Fizyki, Wydział Fizyki, Uniwersytet Warszawski oraz Instytut Matematyczny PAN, Warszawa, Poland

15/5/2013 *The geometry and cohomology of the two-dimensional CFT*, Séminaire général, Institut de Mathématiques de Bourgogne, Dijon, France

13/2/2013 *Defects, gerbes and the gauge anomaly*, invited talk at the Workshop on Field Theories with Defects, Center for Mathematical Physics, Universität Hamburg, Germany

18-20/9/2012 *Sigma models up for grabs*, lectures on (gauged) multi-phase sigma models, gerbes and generalised geometry at the Arnold Sommerfeld Center for Theoretical Physics of Ludwig-Maximilians-Universität München, Germany

23/8/2012 *Gauge defect networks in 2d CFT*, invited talk at the XXIX International Colloquium on Group-Theoretical Methods in Physics, The Chern Institute of Mathematics, Nankai University, Tianjin, China

30/6/2012 *The Gauge Principle in Two-Dimensional Conformal Field Theory*, The XXXI Workshop on Geometric Methods in Physics, Zakład Fizyki Matematycznej, Wydział Matematyki i Informatyki, Uniwersytet w Białymstoku, Poland

11,13/01/2012 *The Gauge Principle in 2d sigma-models/critical string theory I, II*, Seminar "Exact Results in Quantum Theory and Relativity", Katedra Metod Matematycznych Fizyki, Wydział Fizyki, Uniwersytet Warszawski, Poland

31/10/2011 *Bi-brane Fusion*, invited talk at the Workshop on Representation Theoretical and Categorical Structures in Quantum Geometry and Conformal Field Theory, Department Mathematik, Friedrich-Alexander-Universität Erlangen–Nürnberg, Erlangen, Germany

15/4/2011 *Spin Chains from the Frog's Perspective*, Conference "stringtheory.pl/2011", Instytut Fizyki Teoretycznej, Wydział Fizyki, Uniwersytet Warszawski, Poland

24/11/2010 *Strings, Gerbes, and All That. 2. Symmetries and Generalised Geometry*, Seminar "Methods of Geometry in Physics", Instytut Matematyki PAN, Warszawa, Poland

18,25/11/2010 *Strings, Gerbes, and All That. 1. Generalities*, Seminar "Theory of Duality", Katedra Metod Matematycznych Fizyki, Wydział Fizyki, Uniwersytet Warszawski, Poland

24/9/2010 *A new air on the old $\mathcal{G}$-string*, invited talk at The International Conference "Geometry and Physics", Instytut Matematyki, Uniwersytet Jagielloński, Kraków, Poland

29/3/2010 *On Gerbes, Generalised Geometry and σ-Models*, Mathematical Physics Seminar, Instytut Matematyki, Uniwersytet Jagielloński, Kraków, Poland

24/3/2010 *Gauging Sigma Models in the Presence of Conformal Defects*, SFB Meeting, Hamburg, Germany

23/2/2010 *Defects, Dualities and Gauging in String Theory via Gerbes*, Nordic String Theory Meeting 2010, Hannover, Germany

6/12/2009 *Gerbes, Symmetries and Generalised Geometry*, invited talk at The 5th Meeting of the Seminar "Transformation Groups and Mathematical Physics", Hamburg, Germany

14/10/2009 *Gerbes, Defects and Fusion Rules*, The 5th Baltic–Nordic Workshop "Algebra, Geometry, and Mathematical Physics", Będlewo, Poland

27/4/2009 *Gerbes, World-Sheet Defects and σ-Model Symmetries*, Albert-Einstein-Institut, Golm, Germany

24/4/2009 *Why Gerbes Matter?*, introductory lectures on bundle gerbes at the Albert-Einstein-Institut, Golm, Germany

8/1/2009 *On Bundle Gerbes and Non-linear Sigma Models*, Seminar "Theory of Duality", Katedra Metod Matematycznych Fizyki, Wydział Fizyki, Uniwersytet Warszawski, Poland

21/12/2008 *Gerbes Matter*, Conference "Quantum Gravity in Cracow^2", Instytut Fizyki Teoretycznej, Uniwersytet Jagielloński, Kraków, Poland

28/11/2008 *Gerbes for World-Sheets Aquiver*, Séminaire "Géométrie et Physique mathématique" de l'Équipe Algèbre, Géométrie, Logique, Institut Camille Jordan, Université Claude Bernard Lyon 1, France

14/11/2008 *World-Sheet Defects, Symmetries and Gerbes*, DESY Workshop on "Applied $2d$ Sigma Models", Deutsches Elektron Synchrotron, Hamburg, Germany

22/9/2008 *World-Sheet Structures for Defect Junctions in $2d$ σ-Models*, invited talk at the ESI Workshop on "Operator Algebras and Conformal Field Theories", The Erwin Schrödinger International Institute for Mathematical Physics, Wien, Austria

4/2008 *Per Gerba ad Astra – Gerbes Made Simple I,II,III*, introductory lectures on bundle gerbes at the Department of Mathematics, King's College London, UK

27/8/2007 *From Higher to Twisted Gauge Fields via Deformed σ-Models*, ESI Workshop on "Poisson Sigma Models, Lie Algebroids, Deformations, and Higher Analogues", The Erwin Schrödinger International Institute for Mathematical Physics, Wien, Austria

27/4/2007 *Landscape with a Background Gerbe*, Seminar "Exact Results in Quantum Theory and Relativity", Katedra Metod Matematycznych Fizyki, Wydział Fizyki, Uniwersytet Warszawski, Poland

5/4/2007 *The Reshetikhin–Turaev Construction – an Example of TQFT*, Arbeitsgemeinschaft mit aktuellem Thema: "Algebraic Structures in Conformal Field Theories", Mathematisches Forschungsinstitut Oberwolfach, Germany

22/11/2006 *Air on the $\mathcal{G}$-String*, Séminaire "Géométrie et Physique mathématique" de l'Équipe Algèbre, Géométrie, Logique, Institut Camille Jordan, Université Claude Bernard Lyon 1, France

13/9/2006 *The Geometry of WZW Branes – from gerbes to quantum groups and back*, International Workshop of the EUCLID Network "Integrable Models and Applications: from Strings to Condensed Matter", Laboratoire de Physique, École Normale Supérieure de Lyon, France

6/4/2006 *Cold Fusion for WZW Branes*, the Gong Show at the Spring School of the EUCLID Network "Integrable Models and Applications: from Strings to Condensed Matter", Institut für Theoretische Physik, Freie Universität Berlin, Germany

27/5/2005 *Quantum Wess–Zumino–Novikov–Witten Branes*, The Friday Seminar, Instytut Fizyki Teoretycznej, Uniwersytet Wrocławski, Poland

26/1/2005 *Twisted Reflections on Twisted* SU$(2n+1)$ *Branes*, Theoretical Physics Group Seminar, Department of Mathematics, King's College London, UK

28/7/2004 *WZW Patterns in Reflection Algebras*, Theoretical Physics Group Seminar, Department of Mathematics, King's College London, UK

7/11/2001 *Non-commutative Geometry Strikes Back*, Seminar on HEP and Cosmology, Instytut Fizyki Teoretycznej, Uniwersytet Warszawski, Poland

22/10/2001 *Non-commutative Geometries – a New Outlook on Gauge Theories*, Seminar of the Theory of Elementary Interactions, Instytut Fizyki Teoretycznej, Uniwersytet Warszawski, Poland

6/12/2000 *Target Space Non-commutativity in String Theory*, Seminar on HEP and Cosmology, Instytut Fizyki Teoretycznej, Uniwersytet Warszawski, Poland

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Conferences, Workshops and Schools – participation

13-17/11/2024 The Bucharest 2024 Mini-School "Mathematical Methods in Gravitation & Cosmology", CERN–SEENET-MTP–ICTP PhD Training Programme, Bucureşti, Romania (invited lectures)

24-28/7/2023 The XXVII. International Conference on Integrable Systems and Quantum Symmetries, Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague, Czechia

23-26/8/2022 The Workshop "Geometric Structures and Supersymmetry 2022", Universitetet i Tromsø – Norges arktiske universitet, Tromsø, Norway

8-22/8/2022 The ESI Thematic Programme "Higher Structures and Field Theory", The Erwin Schrödinger International Institute for Mathematical Physics, Wien, Austria

18-22/7/2022 The XXXIV International Colloquium on Group-Theoretical Methods in Physics, Université de Strasbourg, Strasbourg, France

11-15/7/2022 String Math 2022, Wydział Fizyki, Uniwersytet Warszawski, Poland

13-26/9/2020 The ESI Thematic Programme "Higher Structures and Field Theory", The Erwin Schrödinger International Institute for Mathematical Physics, Wien, Austria

2-6/9/2019 Bucharest Conference on Geometry and Physics, Simon Stoilow Institute of the Romanian Academy, Bucharest, Romania

27/5-4/6/2019 The 2^{nd} JNMP Conference on Nonlinear Mathematical Physics: 2019, Centro de estudios de postgrado y educación continua, Universidad de Santiago de Chile, Chile

6-8/3/2017 Advanced School on Integrability, Instytut Fizyki Teoretycznej, Wydział Fizyki, Uniwersytet Warszawski, Poland

7-9/12/2015 Advanced School on Topological Quantum Field Theory, Katedra Metod Matematycznych Fizyki and Instytut Fizyki Teoretycznej, Wydział Fizyki, Uniwersytet Warszawski, Poland

13-15/2/2013 The Workshop on Field Theories with Defects, Center for Mathematical Physics, Universität Hamburg, Germany

20-26/8/2012 The XXIX International Colloquium on Group-Theoretical Methods in Physics, The Chern Institute of Mathematics, Nankai University, Tianjin, China

24-30/6/2012 The XXXI Workshop on Geometric Methods in Physics, Zakład Fizyki Matematycznej, Wydział Matematyki i Informatyki, Uniwersytet w Białymstoku, Poland

31/10-2/11/2011 Workshop on Representation Theoretical and Categorical Structures in Quantum Geometry and Conformal Field Theory, Department Mathematik, Friedrich-Alexander-Universität Erlangen–Nürnberg, Erlangen, Germany

15-17/4/2011 Conference "stringtheory.pl/2011", Instytut Fizyki Teoretycznej, Wydział Fizyki, Uniwersytet Warszawski, Poland

21-25/9/2010 International Conference "Geometry and Physics", Instytut Matematyki, Uniwersytet Jagielloński, Kraków, Poland

24/3/2010 SFB Meeting, Universität Hamburg, Germany

22-23/2/2010 Nordic String Theory Meeting 2010, Leibniz Universität Hannover, Germany

5-6/12/2009 The 5th Meeting of the Seminar "Transformation Groups and Mathematical Physics", Universität Hamburg, Germany

22-26/6/2009 *"Strings 2009"*, Universitá degli studi di Roma "Tor Vergata", Italy

3-4/4/2008 *The 13th Annual UK meeting on Integrable Models, Conformal Field Theory and Related Topics*, Oxford University, UK

19-21/12/2008 *"Quantum Gravity in Cracow^2"*, Instytut Fizyki Teoretycznej, Uniwersytet Jagielloński, Poland

10-14/11/2008 *DESY Workshop on "Applied 2d Sigma Models"*, Deutsches Elektron Synchrotron, Hamburg, Germany

25/8-14/12/2008 *ESI Workshop on "Operator Algebras and Conformal Field Theories"*, The Erwin Schrödinger International Institute for Mathematical Physics, Wien, Austria

11-15/8/2008 *Prestrings '08 in Zürich*, Eidgenössische Technische Hochschule, Zürich, Switzerland

11-12/4/2008 *The 13th Annual UK meeting on Integrable Models, Conformal Field Theory and Related Topics*, International Centre for Mathematical Sciences, Edinburgh, UK

14-15/12/2007 *"Fields, Lattices and Condensed Matter"*, A symposium in honour of John Cardy's 60th birthday, Oxford University, UK

1/8-21/9/2007 *ESI Workshop on "Poisson Sigma Models, Lie Algebroids, Deformations, and Higher Analogues"*, The Erwin Schrödinger International Institute for Mathematical Physics, Wien, Austria

28-30/6/2007 *"Fields, Fluids and Branes", Conference on Mathematical Physics on the Occasion of the 60th Birthday of Krzysztof Gawędzki*, Laboratoire de Physique, École Normale Supérieure de Lyon, France

1-7/4/2007 *Arbeitsgemeinschaft mit aktuellem Thema: "Algebraic Structures in Conformal Field Theories"*, Mathematisches Forschungsinstitut Oberwolfach, Germany

11-15/9/2006 *International Workshop of the EUCLID Network "Integrable Models and Applications: from Strings to Condensed Matter"*, Laboratoire de Physique, École Normale Supérieure de Lyon, France (coorganiser)

6-11/4/2006 *Spring School of the EUCLID Network "Integrable Models and Applications: from Strings to Condensed Matter"*, Institut für Theoretische Physik, Freie Universität Berlin, Germany (coorganiser)

7-18/6/2004 *ESI Workshop on "String theory on non-compact and time-dependent backgrounds"*, The Erwin Schrödinger International Institute for Mathematical Physics, Wien, Austria

15-23/3/2004 *Spring School on Superstrings and Related Matters*, The Abdus Salam International Centre of Theoretical Physics, Trieste, Italy

2-12/6/2003 *School on Mathematics in String and Field Theory*, The Abdus Salam International Centre of Theoretical Physics, Trieste, Italy

31/3-8/4/2003 *Spring School on Superstrings and Related Matters*, The Abdus Salam International Centre of Theoretical Physics, Trieste, Italy

25-29/5/2002 *V European Meeting "From the Planck Scale to the Electroweak Scale: SUPERSYMMETRY AND BRANE WORLDS"*, Kazimierz Dolny nad Wisłą, Poland

18-26/3/2002 *Spring School on Superstrings and Related Matters*, The Abdus Salam International Centre of Theoretical Physics, Trieste, Italy

3-14/9/2001 *VII National Summer School for Graduate Students, WE-Heraeus-Doktorandenschule Saalburg "Grundlagen und neue Methoden der theoretischen Physik"*, Saalburg, Germany

5-16/2/2001 *XXXVII Winter School of Theoretical Physics*, Karpacz, Poland

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Conferences, Workshops and Schools – co-organisation

11-15/7/2022 String Math 2022, Wydział Fizyki, Uniwersytet Warszawski, Poland

19-21/6/2017 *From Field Theory to Non-Equilibrium*, Conference on Mathematical Physics in honour of Krzysztof Gawędzki on the occasion of his 70th birthday, Laboratoire de Mathématiques J.A. Dieudonné, Nice, France

13-15/2/2013 Advanced School on Topological Quantum Field Theory, Katedra Metod Matematycznych Fizyki and Instytut Fizyki Teoretycznej, Wydział Fizyki, Uniwersytet Warszawski, Poland

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Student groups, colloquia and seminars organised

10/2024- An informal student work-group café colloquium "Le Point G" on higher algebra and geometry in physics, at a local café "Kolonia Ochota" (initiation, animation and co-organisation with Jakub Filipek, Adrian Mirecki and Hubert Ziajka)

3/2024- The Trans-Carpathian Seminar on Geometry and Physics (initiation, animation and co-organisation with Prof. Dr. J. Grabowski, Dr. K. Grabowska and Prof. Dr. J. Jezierski of KMMF Warsaw, and Prof. Dr. Calin I. Lazaroiu, Dr. M. Babalic and Prof. Dr. S. Carstea of IFIN-HH Bucharest)

10/2023 - Proseminar of the Students' Circle for Mathematical Structures in Physics at Wydział Fizyki Uniwersytetu Warszawskiego (initiation, animation and co-supervision with Dr. M. Napiórkowski of KMMF WFUW)

11/2021 - 6/2022 Proseminar "Methods of Higher Algebra and Geometry in Physics" (a students' colloquium on mathematical physics; course ID: 1100-4sAGMP)

10/2014 - 6/2024 Seminar "The Theory of Duality" (a seminar on mathematical physics, organised jointly with Profs. J. Dereziński, P. Urbański and J. Wojtkiewicz, and Drs. J. de Lucas Araujo and M. Napiórkowski of KMMF WFUW; course ID: 1120-5sTD)

10/2013 - 10/2019 Proseminar "The Algebra & Geometry of Modern Physics" (a students' colloquium on mathematical physics, organised jointly with Dr. K. Palka of IM PAS and Dr. P. Sułkowski of ITP UW since 2013; course ID: 1100-4sAGMP)

21/3 - 5/4/2013 a series of monographic lectures on "Asymptotics of β ensembles" by Dr. Karol K. Kozłowski (CNRS, Université de Bourgogne, Institut de Mathématiques de Bourgogne, Dijon) given at Katedra Metod Matematycznych Fizyki and Instytut Fizyki Teoretycznej Wydziału Fizyki Uniwersytetu Warszawskiego

10/2012 - 9/2013 The Thursday Colloquium "The Algebra & Geometry of Modern Physics" (a colloquium on mathematical physics, organised jointly with Dr. K. Palka of IM PAN and Dr. P. Sułkowski of IFT WFUW; course ID: 1100-4sTAGOMP)

Expert panels

10/2022 - member of an expert panel at Excellence Initiative – Research University at the University of Warsaw for the evaluation of Ph.D. student grant proposals

10/2013 member of an NCN expert panel (ekspert zewnętrzny) for the evaluation of a grant proposal from panel ST1 (type OPUS)

4-5/2013 membre externe du comité de recrutement, Institut de Mathématiques de Bourgogne, Dijon, France

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Administrative duties

2016 - 2019 member of the Faculty Council, Faculty of Physics, University of Warsaw

1-3/2015 member of a faculty commission for the PhD recruitment procedures, Faculty of Physics, University of Warsaw

2015 - 2019 creation and administration of the official web page of the Department of Mathematical Methods in Physics, Faculty of Physics, University of Warsaw

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Education

Post-graduate

6/10/2005 **Ph.D. in theoretical physics** at the Physics Faculty of the University of Warsaw

Thesis: *Quantum Wess–Zumino–Novikov–Witten Branes*
Scientific advisor: Dr. hab. Jacek Pawełczyk, Prof. UW
Referees: Prof. Dr. hab. Jerzy Lukierski (University of Wrocław)
Prof. Dr. hab. Krzysztof Meissner (University of Warsaw)

7/2004 - 8/2005 **Marie-Curie Fellowship** at the Department of Mathematics, King's College London, UK

Project: *Spectral Non-commutative Geometry of the Boundary CFT*
Scientific advisor: Dr. Andreas Recknagel

10/2001 - 10/2005 **Ph.D. studies** at the Institute of Theoretical Physics at the Physics Faculty of the University of Warsaw

Project: *Quantum Wess–Zumino–Novikov–Witten Branes*
Scientific advisor: Dr. hab. Jacek Pawełczyk, Prof. UW

Undergraduate

5/7/2001 **M.Sci. in theoretical physics** at the Physics Faculty of the University of Warsaw (*summa cum laude*)

Thesis: *The structures of non-commutative geometry in string theory*
Scientific advisor: Dr. hab. Jacek Pawełczyk, Prof. UW
Referee: Prof. Dr. hab. Krzysztof Meissner (University of Warsaw)

6/2001 graduation at the Physics Faculty of the University of Warsaw

1999 - 2001 M.Sci. studies at the Physics Faculty of the University of Warsaw

Project: *The structures of non-commutative geometry in string theory*
Scientific advisor: Dr. hab. Jacek Pawełczyk, Prof. UW

1999 - 2001 Interdisciplinary Individual Studies in Mathematical and Natural Sciences, University of Warsaw

Scientific advisor: Dr. hab. Jacek Pawełczyk, Prof. UW

Pre-university

5/1996	**baccalaureate**, II Liceum in Puławy, woj. lubelskie
1992 - 1996	II Liceum in Puławy, woj. lubelskie; mathematic-physical profile (12/1994 Cambridge Certificate of Proficiency in English)
1984 - 1992	Primary School No. 9 in Puławy, woj. lubelskie

FELLOWSHIPS

10/2009 - 9/2010	Post-doctoral fellow in Sonderforschungsbereich "Teilchen, Strings und frühes Universum: Struktur von Materie und Raum-Zeit", Section A4 "Mathematical Foundations of String Theory", Bereich Algebra und Zahlentheorie, Department Mathematik, Universität Hamburg, Germany (project coordinator: Prof. Dr. hab. Christoph Schweigert)
9/2008 - 11/2008	Junior Research Fellow at The Erwin Schrödinger International Institute for Mathematical Physics, Wien, Austria
11/2007 - 11/2009	EPSRC First Grant EP/E005047/1, Department of Mathematics, King's College London, UK (grant coordinator: Prof. Dr. hab. Ingo Runkel)
10/2006 - 9/2007	ANR Post-doctoral Fellow at Laboratoire de Physique, École Normale Supérieure de Lyon, France (scientific advisor: Prof. Dr. hab. Krzysztof Gawędzki)
11/2005 - 9/2006	EUCLID Post-Doctoral Fellow at Laboratoire de Physique, École Normale Supérieure de Lyon, Francja (scientific advisor: Prof. Dr. hab. Krzysztof Gawędzki)
7/2004 - 8/2005	Marie Curie Fellow at the Department of Mathematics, King's College London, UK (scientific advisor: Dr. Andreas Recknagel)
2003 - 2005	Research grant of the Committee of Scientific Research No. 2 P03B 001 25 (grant coordinator: Dr. hab. Jacek Pawełczyk, Prof. UW)
2001 - 2005	Doctoral fellow at the Physics Faculty of the University of Warsaw

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Teaching – lecture courses and tutorial classes

2024/2025	lecture course on „Group Theory I" (1100-3'TG1) and monographic lecture course on „Group Theory II" (1100-2'TG2), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semester)
2024/2025	monographic lecture course on „Duality, descent and defects: The higher geometry and category theory of charged dynamics I & II" (1100-DDD), Faculty of Physics, University of Warsaw; 30+60 hrs (fall and spring semesters)
2024/2025	The Trans-Carpathian Seminar on Geometry and Physics; 30 hrs (fall semester)
2023/2024	lecture course on „Group Theory I" (1100-3'TG1) and monographic lecture course on „Group Theory II" (1100-2'TG2), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semester)
2023/2024	monographic lecture course on „Elements of higher algebra in physics I & II" (1100-MAF), Faculty of Physics, University of Warsaw; 60+30 hrs (fall and spring semesters)
2023/2024	tutorial classes on „Analysis IIIE" (1100-2Ind14), Faculty of Physics, University of Warsaw; 60 hrs (fall semester)
2023/2024	seminar "The Theory of Duality", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)
2023/2024	The Trans-Carpathian Seminar on Geometry and Physics; 30 hrs (spring semester)
2022/2023	monographic lecture on „Group Theory II" (1100-2'TG2), Faculty of Physics, University of Warsaw; 30 hrs (spring semester)
2022/2023	monographic lecture course on „Elements of higher algebra in physics I & II" (1100-MAF), Faculty of Physics, University of Warsaw; 60+30 hrs (fall and spring semesters)
2022/2023	tutorial classes on „Algebra IE" (1100-1Ind02) and „Algebra IIE" (1100-1Ind06), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)
2022/2023	tutorial classes on „Analysis III" (1100-2AF10), Faculty of Physics, University of Warsaw; 60 hrs (fall semester)
2022/2023	tutorial classes on „Algebra IE" (1100-1Ind02) and „Algebra IIE" (1100-1Ind06), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)
2022/2023	seminar "The Theory of Duality", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)
2021/2022	monographic lecture course on „Group Theory II" (1100-2'TG2), Faculty of Physics, University of Warsaw; 30 hrs (spring semester)
2021/2022	monographic lecture and tutorial classes on „Differential geometry II" (1100-2'GR2), Faculty of Physics, University of Warsaw; 30+30 hrs (spring semester)
2021/2022	tutorial classes on „Algebra IE" (1100-1Ind02) and „Algebra IIE" (1100-1Ind06), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2021/2022 student proseminar "Methods of Higher Algebra & Geometry in Physics" (1100-4sAGMP), Faculty of Physics, University of Warsaw; 45 hrs (fall and spring semesters)

2021/2022 seminar "The Theory of Duality", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2020/2021 monographic lecture course and tutorial classes on „Group Theory II" (1100-2'TG2), Faculty of Physics, University of Warsaw; 30+30 hrs (spring semester)

2020/2021 monographic lecture course on „Elements of higher algebra in physics I & II" (1100-MAF), Faculty of Physics, University of Warsaw; 30+60 hrs (fall and spring semesters)

2020/2021 tutorial classes on „Algebra & geometry II" (1100-1AF20), Faculty of Physics, University of Warsaw; 30 hrs (spring semesters)

2020/2021 tutorial classes on „Analysis IIIE" (1100-2Ind14), Faculty of Physics, University of Warsaw; 60 hrs (fall semester)

2020/2021 tutorial classes on „Algebra IE" (1100-1Ind02) and „Algebra IIE" (1100-1Ind06), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2020/2021 seminar "The Theory of Duality", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2019/2020 monographic lecture and tutorial classes on „Classical Field Theory" (1100-4CFT), Faculty of Physics, University of Warsaw; 30+30 hrs (spring semester)

2019/2020 monographic lecture and tutorial classes on „Differential geometry II" (1100-2'GR2), Faculty of Physics, University of Warsaw; 30+30 hrs (spring semester)

2019/2020 tutorial classes on „Mathematics III" (1100-2AF11), Faculty of Physics, University of Warsaw; 60 hrs (fall semester)

2019/2020 tutorial classes on „Algebra IE" (1100-1Ind02) and „Algebra IIE" (1100-1Ind06), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2019/2020 seminar "The Theory of Duality", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2018/2019 supervision of a student group project on mathematical physics (1100-ZPS1), Faculty of Physics, University of Warsaw; 30 hrs (spring semester)

2018/2019 monographic lecture course on „Elements of higher geometry in physics III" (1100-3'EGWF), Faculty of Physics, University of Warsaw; 30 hrs (fall semester)

2018/2019 monographic lecture and tutorial classes on „Differential geometry II" (1100-2'GR2), Faculty of Physics, University of Warsaw; 30+30 hrs (spring semester)

2018/2019 lecture on „Mathematics II" (1100-1AF22), Faculty of Physics, University of Warsaw; 90 hrs (spring semester)

2018/2019 tutorial classes on „Algebra IE" (1100-1Ind02) and „Algebra IIE" (1100-1Ind06), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2018/2019 seminar "The Theory of Duality", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2017/2018 monographic lecture course on „Elements of higher geometry in physics I & II" (1100-2'EAWF), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2017/2018 monographic lecture and tutorial classes on „Differential geometry II" (1100-2'GR2), Faculty of Physics, University of Warsaw; 30+30 hrs (spring semester)

2017/2018 tutorial classes on „Algebra IE" (1100-1Ind02) and „Algebra IIE" (1100-1Ind06), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2017/2018 seminar "The Theory of Duality", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2017/2018 student proseminar The Thursday Colloquium "The Algebra & Geometry of Modern Physics", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2016/2017 monographic lecture course on „Elements of higher geometry in physics III" (1100-3'EGWF), Faculty of Physics, University of Warsaw; 30 hrs (fall semester)

2016/2017 tutorial classes on „Differential geometry I" (1100-2Ind05) and „Differential geometry II" (1100-2'GR2), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2016/2017 tutorial classes on „Algebra IE" (1100-1Ind02) and „Algebra IIE" (1100-1Ind06), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2016/2017 seminar "The Theory of Duality", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2016/2017 student proseminar The Thursday Colloquium "The Algebra & Geometry of Modern Physics", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2015/2016 monographic lecture course on „Elements of higher algebra in physics I & II" (1100-2'EAWF), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2015/2016 lecture course on „Algebra IE" (1100-1Ind02) and „Algebra IIE" (1100-1Ind06), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2015/2016 seminar "The Theory of Duality", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2015/2016 student proseminar The Thursday Colloquium "The Algebra & Geometry of Modern Physics", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2015/2016 tutorial classes on „Differential geometry I" (1100-2Ind05) and „Differential geometry II" (1100-2'GR2), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2014/2015 seminar "The Theory of Duality", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2014/2015 seminar The Thursday Colloquium "The Algebra & Geometry of Modern Physics", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2014/2015 lecture course on „Group theory I" (1100-3'TG1), Faculty of Physics, University of Warsaw; 30 hrs (fall semester)

2014/2015 tutorial classes on „Differential geometry I" (1100-2Ind05), Faculty of Physics, University of Warsaw; 30 hrs (fall semester)

2014/2015 tutorial classes on „Analysis III" (1100-2AF10), Faculty of Physics, University of Warsaw; 60 hrs (fall semester)

2014/2015 tutorial classes on „Algebra IE" (1100-1Ind02) and „Algebra IIE" (1100-1Ind06), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2014/2015 tutorial classes on „Mathematics I" (1100-1AF11), Faculty of Physics, University of Warsaw; 90 hrs (fall semester)

2013/2014 seminar The Thursday Colloquium "The Algebra & Geometry of Modern Physics", Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2013/2014 tutorial classes on „Algebra with geometry II" (1100-1AF20), Faculty of Physics, University of Warsaw; 30 hrs (spring semester)

2013/2014 tutorial classes on „Algebra IE" (1100-1Ind02), Faculty of Physics, University of Warsaw; 30 hrs (fall semester)

2013/2014 tutorial classes on „Mathematics I" (1100-1AF11) and „Mathematics II" (1100-1AF22), Faculty of Physics, University of Warsaw; 120+90 hrs (fall and spring semesters)

2012/2013 lecture course on „Algebra IE" (1100-1Ind02) and „Algebra IIE" (1100-1Ind06), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2012/2013 tutorial classes on „Analysis I" (1100-1AF12) and „Analysis II" (1100-1AF21), Faculty of Physics, University of Warsaw; 60+60 hrs (fall and spring semesters)

2011/2012 tutorial classes on „Mathematics II" (1100-1AF22), Faculty of Physics, University of Warsaw; 90 hrs (spring semester)

2011/2012 tutorial classes on „Algebra IE" (1100-1Ind01), Faculty of Physics, University of Warsaw; 30 hrs (fall semester)

2011/2012 tutorial classes on „Analysis III" (1100-2AF10), Faculty of Physics, University of Warsaw; 60 hrs (fall semester)

2010/2011 tutorial classes on „Algebra IIE" (1100-1Ind06), Faculty of Physics, University of Warsaw; 30 hrs (spring semester)

2010/2011 tutorial classes on „Analysis III" (1100-2AF10) and „Analysis IV" (1100-3AnIV), Faculty of Physics, University of Warsaw; 60+30 hrs (fall and spring semesters)

2010/2011 tutorial classes on „Algebra with geometry I" (1100-1AF01) and „Algebra with geometry II" (1100-1AF20), Faculty of Physics, University of Warsaw; 30+30 hrs (fall and spring semesters)

2003/2004 tutorial classes on „Mathematics I" (1102-101A), Faculty of Physics, University of Warsaw; 60 hrs (fall semester)

2001/2002 tutorial classes on „Electrodynamics with elements of field theory", Faculty of Physics, University of Warsaw; 60 hrs (spring semester)

2001/2002 tutorial classes on „Analysis IB" and „Analysis IIB", Faculty of Physics, University of Warsaw; 60+60 hrs (fall and spring semesters)

Teaching – syllabus preparation & student projects

2024/2025 - an innovatory advanced lecture course on "Duality, descent and defects: The higher geometry and category theory of charged dynamics I & II" (1100-DDD), discussing applications of higher algebra, geometry and category theory (and in particular: the gauge principle for symmetries model on Lie groupoids, higher-geometric structures for non-trivial topologies of current worldvolumes, and $\mathbb{Z}/2\mathbb{Z}$-graded lagrangean dynamics with supersymmetry) in charged dynamics

2015/2016 - supervision of several advanced student projects on mathematical physics realised in partial fulfillment of the requirements for the completion of the monographic course on "Elements of higher algebra in physics" (1100-2'EGWF) and "Elements of higher geometry in physics" (1100-3'EGWF) (topics include: Hermitean forms and Majorana spinors, Symplectic Clifford algebras, Kostant's symplectic spinors and metaplectic structure on manifolds, Elements of twistor theory, Dirac operator and the differential geometry of (space-)time – elements of Connes' spectral triples, Nonlinear realisations of symmetries and the so-called inverse Higgs effect, Mechanics of massive loops with a topological charge in external field, or a physical introduction to gerbe theory, Lie groupoids and their tangent structures in the description of gauge theories)

2016/2017 preparation and realisation of the programme of a two-semester course on "Chern–Simons Theory with Wilson Lines – canonical description, geometric quantisation and relation to CFT" as part of the proseminar "The Algebra & Geometry of Modern Physics" (supervision of students' talks)

2014/2019 an innovatory advanced lecture course on "Elements of higher algebra in physics" (1100-2'EGWF) and "Elements of higher geometry in physics" (1100-3'EGWF), discussing applications of higher algebra, geometry and category theory in physics

2015/2016 preparation and realisation of the programme of a two-semester course on "The Algebra and Geometry of Fibre and Jet Bundles and their application in field theory" as part of the proseminar "The Algebra & Geometry of Modern Physics" (a series of lectures and supervision of students' talks)

2014/2015 preparation and realisation of the programme of a two-semester course on "The Algebra and Geometry of Spinors" as part of The Thursday Colloquium "The Algebra & Geometry of Modern Physics" (a series of lectures and supervision of students' talks)

2012/2013 an innovatory, substantially modernised lecture course on algebra for individual students

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Teaching & supervision – students

10/2024 - Adrian Mirecki – undergraduate studies in mathematics and physics at Interfaculty Individual Studies in Mathematics and Natural Sciences at the University of Warsaw

10/2023 - Students' Circle on Mathematical Structures in Physics at the Faculty of Physics, University of Warsaw (initiation, animation and co-supervision with Dr. M. Napiórkowski of KMMF WFUW)

10/2023 - Jakub Filipek – graduate studies in mathematics and physics at Inter-faculty Individual Studies in Mathematics and Natural Sciences at the University of Warsaw

10/2023 - Hubert Ziajka – undergraduate studies in mathematics and physics at Inter-faculty Individual Studies in Mathematics and Natural Sciences at the University of Warsaw

10/2023 - 10/2024 Jan Turczynowicz – undergraduate studies in physics at the Faculty of Physics at the University of Warsaw

10/2022 - 10/2023 Marcelina Żuk – undergraduate studies in mathematics and physics at Inter-faculty Individual Studies in Mathematics and Natural Sciences at the University of Warsaw

10/2020 - 9/2021 Marcin Mielniczuk – B.A. in mathematics; thesis "A moment with momenta: from physics to the algebra and geometry of the momentum map" (referee: Dr. hab. M. Bobieński; grade: very good)

3/2014 - 10/2016 Aleksander Strzelczyk – B.A. in physics; thesis "Applications of differential topology in two-dimensional topological quantum field theory" (referee: Prof. Dr. hab. J. Dereziński; grade: very good)

Other activities

2017-	general frontidarchist as well as targeted anti-fascist, anti-rashist, anti-racist, anti-nationalist, anti-fundamentalist and counter-necropolitical action directe
2016/2017	coorganisation of a series of academic debates on cultural and civil issues at the Institute of Biochemistry and Biophysics of the Polish Academy of Sciences
22/5/2014	coorganisation of a public debate on the subject „Żydzi w Ukrainie i Europie czasu Majdanu" at the Museum of the History of Polish Jews "Polin"
1/2014	participation in the Euromaydan, Kyiv, Ukraine
2010	a multimedia presentation of the Department of Mathematical Methods in Physics at the information day for undergraduate students, Faculty of Physics, University of Warsaw

Warszawa, December 1st, 2024 Rafał R. Suszek