
PERSONAL

- **Citizenship:** Swiss (Zurich)
- **Birthday:** Jan. 6, 1992

EDUCATION

- **University of Zurich** Switzerland, ZH
Dr. sc. nat. in Mathematics *Sep. 2016 – July 2020*
 - **Advisor:** Prof. Dr. Alberto S. Cattaneo
 - **Thesis title:** Globalization Constructions for Perturbative Quantum Gauge Theories on Manifolds with Boundary
 - **Defended:** July 6, 2020
- **University of Zurich** Switzerland, ZH
Master of Science (M.Sc.) in Mathematics *Sep. 2015 – Sep. 2016*
 - **Advisor:** Prof. Dr. Alberto S. Cattaneo
 - **Thesis title:** Deformation Quantization of the Relational Symplectic Groupoid for Constant Poisson Structures
- **University of Zurich / ETH Zurich** Switzerland, ZH
Bachelor of Science (B.Sc.) in Mathematics *Sep. 2012 – Sep. 2015*

POSITIONS

- **Max-Planck-Institut für Mathematik** Germany, Bonn
(Prospective) Postdoctoral researcher *March 2023 – Sep. 2023*
 - **Mentor:** Dr. Christian Blohmann
 - : (Offered for 2 years, accepted only 6 months in order to go to UC Berkeley)
- **University of California, Berkeley** USA, CA
SNSF Postdoctoral fellow *Sep. 2021 – March 2023*
 - **Research group:** Prof. Dr. Nicolai Reshetikhin
- **University of Zurich** Switzerland, ZH
Postdoctoral researcher *Sep. 2020 – Sep. 2021*
 - **Research group:** Prof. Dr. Alberto S. Cattaneo
- **University of Zurich** Switzerland, ZH
Teaching assistant at the Institute for Mathematics (as a Ph.D. student) *Sep. 2016 – July 2020*
 - **Research group:** Prof. Dr. Alberto S. Cattaneo
- **ETH Zurich** Switzerland, ZH
Teaching assistant at the Department for Mathematics (as a B.Sc./M.Sc. student) *Sep. 2015 – July 2016*
- **University of Zurich** Switzerland, ZH
Teaching assistant at the Institute for Mathematics (as a B.Sc./M.Sc. student) *Sep. 2014 – Sep. 2016*

APPROVED RESEARCH PROJECTS

- **Swiss National Science Foundation (SNSF):** Early postdoc mobility grant P2ZHP2_199401 for the project (*Topological Quantum Field Theories in the BV-BFV Formalism and Noncommutative Geometry*, amount awarded: CHF 81'500, University of California, Berkeley, Sep. 2021 – March 2023)
- **Graduate Campus (GRC):** Competitive travel grant for a research stay at UC Berkeley, amount awarded: CHF 1'600, University of Zurich, April 2019
- **European Cooperation in Science and Technology (COST):** Short Term Scientific Mission (STSM), competitive grant for a research stay at Università di Roma I, La Sapienza, awarded by the action *Quantum Structure of Spacetime (QSPACE)*, amount awarded: CHF 1'000, March 2019
- **Forschungskredit:** Candoc research grant (competitive) for the research project *The Poisson Sigma Model in the BV-BFV Formalism*, full salary paid by the grant, University of Zurich, Sep. 2018 – Feb. 2019

SUPERVISION OF STUDENTS

- **Xiangling Xu**: ETH Zurich, Semester thesis (Master level): *Constructing the Quantum BCOV Theory on Calabi–Yau Manifolds*, Nov. 2021, official advisor: Prof. Dr. Giovanni Felder
- **Davide Saccardo**: ETH Zurich, Master thesis: *Globalization of the Rozansky–Witten model in the BV-BFV formalism*, June 2021, official advisor: Prof. Dr. Thomas Willwacher
- **Raphaël Binda**: ETH Zurich, Semester thesis (Master level): *Global Gauge Conditions in the Batalin–Vilkovisky Formalism*, Oct. 2020, official advisor: Prof. Dr. Matthias Gaberdiel
- **Fabio Musio**: University of Zurich, Master thesis: *Computation of Kontsevich Weights of Connection and Curvature Graphs for Symplectic Poisson Structures*, Dec. 2019, official advisor: Prof. Dr. Alberto S. Cattaneo
- **Davide Saccardo**: ETH Zurich, Semester thesis (Master level): *Short Star Products for Filtered Quantization*, Dec. 2019, official advisor: Prof. Dr. Giovanni Felder
- **Aurelia Schumacher**: University of Zurich, Master thesis on *Strict Deformation Quantization*, ongoing, official advisor: Prof. Dr. Alberto S. Cattaneo
- **Zhongyu Zhang**: ETH Zurich, Semester project (Master level) on the paper [arXiv:1801.04525](https://arxiv.org/abs/1801.04525) of Ezra Getzler called *Covariance in the Batalin–Vilkovisky formalism and the Maurer–Cartan equation for curved Lie algebras*, ongoing, no official advisor needed
- **Hugo Burkardt**: ETH Zurich, Master thesis on *equivariant BV formalism*, ongoing, official advisor: Prof. Dr. Thomas Willwacher
- **Kaylee Graham**: UC Berkeley, Project (graduate level) on *Logarithms and deformation quantization*, ongoing
- **Ivan Burbano**: UC Berkeley, Project (graduate level) on *JT gravity in the BV-BFV formalism*, ongoing

TEACHING ACTIVITIES

University of California, Berkeley

- **A Medley of Quantum Gauge Theories**: Lecturer, Sep. 2021 – Dec. 2021

University of Zurich

- **Shifted Symplectic Structures**: Reading course on the paper [arXiv:1111.3209](https://arxiv.org/abs/1111.3209), Feb. 2021 – June 2021
- **Poisson Geometry and Deformation Quantization**: Lecturer, Sep. 2020 – Dec. 2020
- **Symplectic Geometry**: Seminar instructor, Feb. 2020 – June 2020
- **Geometry and Topology**: Assistant, Sep. 2019 – Dec. 2019
- **Euclidean Geometry**: Seminar instructor, Feb. 2019 – June 2019
- **Linear Algebra for Natural Sciences**: Assistant, Sep. 2018 – Dec. 2018
- **Differentiable Manifolds**: Assistant, Feb. 2018 – June 2018
- **Geometry and Topology**: Assistant, Sep. 2017 – Dec. 2017
- **Selected Topics in Quantum Field Theory**: Seminar, Feb. 2017 – June 2017
- **Quantum Field Theory from a Functional Integral Point of View**: Assistant, Feb. 2017 – June 2017
- **Algebra**: Assistant, Sep. 2016 – Dec. 2016
- **Foundation Course for Mathematics and Physics**: Assistant, Sep. 2015
- **Analysis for Natural Sciences**: Assistant, Sep. 2015 – Dec. 2015
- **Stochastics for Natural Sciences**: Assistant, Feb. 2015 – June 2015
- **Analysis for Natural Sciences**: Assistant, Sep. 2014 – Dec. 2014

ETH Zurich

- **Linear Algebra II**: Assistant, Feb. 2016 – June 2016
- **Linear Algebra I**: Assistant, Sep. 2015 – Dec. 2015

PUBLICATIONS IN PEER-REVIEWED SCIENTIFIC JOURNALS

- **1**: N. Moshayedi, D. Saccardo
“Formal Global Perturbative Quantization of the Rozansky–Witten Model in the BV-BFV Formalism”,
Journal of Geometry and Physics, Vol. 174 (2022) DOI: [10.1016/j.geomphys.2022.104454](https://doi.org/10.1016/j.geomphys.2022.104454)
- **2**: I. Contreras, N. Moshayedi, K. Wernli
“Convolution algebras for Relational Groupoids and Reduction”,
Pacific Journal of Mathematics, Vol. 313.1 pp. 75–102 (2021) DOI: [10.2140/pjm.2021.313.75](https://doi.org/10.2140/pjm.2021.313.75)
- **3**: N. Moshayedi,
“On Quantum Obstruction Spaces and Higher Codimension Gauge Theories”,
Physics Letters B, Vol. 815 (2021) DOI: [10.1016/j.physletb.2021.136155](https://doi.org/10.1016/j.physletb.2021.136155)
- **4**: N. Moshayedi,
“Formal Global AKSZ Gauge Observables and Generalized Wilson Surfaces”,
Annales Henri Poincaré, Vol. 21 pp. 2951–2995 (2020) DOI: [10.1007/s00023-020-00944-y](https://doi.org/10.1007/s00023-020-00944-y)

- **5:** A. S. Cattaneo, **N. Moshayedi**,
 “Introduction to the BV-BFV formalism”,
 Reviews in Mathematical Physics, Vol. 32 p. 67 (2020) DOI:10.1142/S0129055X2030006X
- **6:** A. S. Cattaneo, **N. Moshayedi**, K. Wernli
 “On the Globalization of the Poisson Sigma Model in the BV-BFV Formalism”,
 Communications in Mathematical Physics, Vol. 375.1 pp. 41–103 (2020) DOI:10.1007/s00220-020-03726-z
- **7:** A. S. Cattaneo, **N. Moshayedi**, K. Wernli
 “Globalization for Perturbative Quantization of Nonlinear Split AKSZ Sigma Models on Manifolds with Boundary”,
 Communications in Mathematical Physics, Vol. 372.1 pp. 213–260 (2019) DOI:10.1007/s00220-019-03591-5
- **8:** A. S. Cattaneo, **N. Moshayedi**, K. Wernli
 “Relational Symplectic Groupoid Quantization for Constant Poisson Structures”,
 Letters in Mathematical Physics, Vol. 107 pp. 1649–1688 (2017) DOI:10.1007/s11005-017-0959-6

ARXIV PREPRINTS

- **9:** **N. Moshayedi**,
 “4-Manifold Topology, Donaldson-Witten Theory, Floer Homology and Higher Gauge Theory Methods in the BV-BFV Formalism”,
[arXiv:2107.00304](https://arxiv.org/abs/2107.00304) (2021) (submitted)
- **10:** **N. Moshayedi**, F. Musio
 “Computation of Kontsevich Weights of Connection and Curvature Graphs for Symplectic Poisson Structures”,
[arXiv:1912.08742](https://arxiv.org/abs/1912.08742) (2019) (to appear in Adv. Theor. Math. Phys.)
- **11:** **N. Moshayedi**,
 “On Globalized Traces for the Poisson Sigma Model”,
[arXiv:1912.02435](https://arxiv.org/abs/1912.02435) (2019) (submitted)

REVIEWS AND LECTURE NOTES (PARTIALLY AVAILABLE ON MY WEBSITE)

- **1:** “Lectures on Symplectic Geometry, Poisson Geometry, Deformation Quantization and Quantum Field Theory”
[arXiv:2012.14662](https://arxiv.org/abs/2012.14662) (2020), University of Zurich
 (under revision for publication in *Lecture Notes in Mathematics*)
- **2:** “Notes on Geometric Quantization”
[arXiv:2010.15419](https://arxiv.org/abs/2010.15419) (2020), University of Zurich
- **3:** “Quantum Field Theory and Functional Integrals”
[arXiv:1902.08652](https://arxiv.org/abs/1902.08652) (2019), University of Zurich
- **4:** “Linear Algebra I/II”
 (in German) ETH Zurich
- **4:** “Geometry and Topology”
 University of Zurich
- **5:** “Classical Mechanics”
 University of Zurich

SOME OTHER MINOR NOTES WRITTEN BY ME:

- **Introduction to Mathematical Finance:** ETH Zurich
- **Notes on Differential Geometry:** University of Zurich
- **Notes on A_∞ -algebras:** ETH Zurich

BOOKS

- **Introduction to Probability Theory: A First Course on the Measure-Theoretic Approach:** to appear in *World Scientific Series on Probability Theory and Its Applications* Vol. 3 (2022)

TALKS AT INTERNATIONAL CONFERENCES AND SEMINARS

- **1:** “Perturbative Quantum Gauge Theories on Manifolds with Boundary”
 Postdoctoral Talks: Talks by New Postdoctoral Members, University of California, Berkeley, California, USA, Nov. 2021
- **2:** “Introduction to Shifted Symplectic Structures”
 Seminar on Shifted Symplectic Structures, Universität Zürich, Zurich, Switzerland, Feb. 2021
- **3:** “Instanton Floer Homology”
 Advanced Topics in Field theory, Universität Zürich, Zurich, Switzerland, Nov. 2020
- **4:** “Discretization of 2d and 3d BF theories. Ponzano-Regge model”
 Advanced Topics in Field theory, Universität Zürich, Zurich, Switzerland, March 2020
- **5:** “Globalization of Split AKSZ Sigma Models in the BV-BFV Formalism”
 Representation Theory and Mathematical Physics Seminar, University of California, Berkeley, California, USA, April 2019
- **6:** “Globalization of Nonlinear AKSZ Sigma Models in the BV-BFV Formalism”
 Algebra and Geometry Seminar, Università di Roma I, La Sapienza, Rome, Italy, March 2019

- 7: “*The modified differential Quantum Master Equation*”
Mathematics and Physics of local quantum field theories, Humboldt-Universität zu Berlin, Berlin, Germany, Dec. 2018
- 8: “*The B-model*”
Advanced Topics in Field Theory, Universität Zürich, Zurich, Switzerland, Nov. 2018
- 9: “*Introduction to Perturbative Quantum Gauge Theories*”
Seminars in geometry/topology, Norwegian University for Science and Technology (NTNU), Trondheim, Norway, Oct. 2018
- 10: “*Perturbative Quantization of Nonlinear AKSZ Sigma Models on Manifolds with Boundary*”
Séminaire Physique mathématique, Institut Camille Jordan, Université de Lyon, Lyon, France, Oct. 2018
- 11: “*The Globalization of the Poisson Sigma Model in the BV-BFV formalism*”
Topology Seminar, University of Notre Dame, Indiana, USA, April 2018
- 12: “*The Globalization of the Poisson Sigma Model in the BV-BFV formalism*”
Symplectic and Poisson Geometry Seminar, University of Illinois at Urbana-Champaign, Illinois, USA, April 2018
- 13: “*The Poisson Sigma Model in the BV-BFV formalism*”
Séminaire Kervaire: Winter School in Mathematical Physics, Les Diablerets, Switzerland, Jan. 2018
- 14: “*Relational Symplectic Groupoid Quantization and the Globalization of the Poisson Sigma Model in the BV-BFV Formalism*”
CMI-LMS Research School: Algebraic Topology of Manifolds, University of Oxford, Oxford, Great Britain, Sep. 2017
- 15: “*Relational Symplectic Groupoid Quantization for Constant Poisson Structures*”
BIRS-CMO: Field Theories and Higher Structures in Mathematics and Physics, Oaxaca, Mexico, June 2017
- 16: “*What is ... Deformation Quantization?*”
Zurich Graduate Colloquium in Mathematics, ETH Zürich/Universität Zürich, Zurich, Switzerland, Dec. 2016

ATTENDED INTERNATIONAL CONFERENCES

- 1: *NCCR SwissMAP*
Winterschool in Mathematical Physics, online, Jan. 2022
- 2: *International Congress on Mathematical Physics (ICMP) and Young Researchers Symposium (YRS)*
ICMP/YRS, Geneva, Switzerland, July/Aug. 2021
- 3: *NCCR SwissMAP*
Winterschool in Mathematical Physics, online, Jan. 2021
- 4: *Western Hemisphere Colloquium on Geometry and Physics (WHCGP)*
online, since April 2020
- 5: *Higher Structures and Field Theory*
ESI, University of Vienna, Vienna, Austria, Aug./Sep. 2020
- 6: *A Gauge Summer with BV: Online*
online, June 2020
- 7: *Global Poisson Webinar*
online, since April 2020
- 8: *NCCR SwissMAP*
Winterschool in Mathematical Physics, Les Diablerets, Switzerland, Feb. 2020
- 9: *New trends in geometry and mathematical physics*, on the occasion of Giovanni Felder’s 60th birthday
CSF Monte Verita, Ascona, Switzerland, Aug. 2019
- 10: *Representation Theory and Integrable Systems*,
on the occasion of the 60th birthday of Vitaly Tarasov and the 70th birthday of Alexander Varchenko
ETH Zürich, Zurich, Switzerland, Aug. 2020
- 11: *QSPACE*, Training School
Centro de Ciencias de Benasque Pedro Pascual, Benasque, Spain, Sep. 2018
- 12: *NCCR SwissMAP*
Winterschool in Mathematical Physics, Les Diablerets, Switzerland, Jan. 2018
- 13: *Algebraic Topology of Manifolds*
CMI-LMS Research School, University of Oxford, Oxford, Great Britain, Sep. 2017
- 14: *String Math*, Summer School
University of Hamburg, Hamburg, Germany, July 2017
- 15: *Arbeitstagung in honor of Yuri Manin*
Physical Mathematics, MPI Bonn, Bonn, Germany, June 2017
- 16: *Field Theories and Higher Structures in Mathematics and Physics*
BIRS-CMO, Oaxaca, Mexico, June 2017
- 17: *NCCR SwissMAP*
Winterschool in Mathematical Physics, Les Diablerets, Switzerland, Jan. 2017
- 18: *Poisson*
School and Conference, Geneva and Zurich, Switzerland, June/July 2016
- 19: *NCCR SwissMAP*
Winterschool in Mathematical Physics, Les Diablerets, Switzerland, Jan. 2015

INTERNAL RESEARCH SEMINAR (UNIVERSITY OF ZURICH): ADVANCED TOPICS IN FIELD THEORY

- **(Fall 2020) Journal Club:** The notion of equivalence in the BV-BFV formalism and examples from Gravity, Ruelle zeta function from field theory, Stratified algebra, Elliptic stable envelopes, Instanton Floer homology, Non-commutative derived Poisson reduction, Factorization algebras on manifolds with boundary, Some elements of dynamical representation theory.
- **(Spring 2020) Loop Quantum Gravity:** 3D gravity, Ponzano-Regge model, 3D TQFTs from spherical fusion categories (Turaev-Viro model), ADM formalism for 4D Einstein-Hilbert gravity, Quantization: Wheeler-DeWitt equation, 4D Palatini action, Plebanski and MacDowell-Mansouri actions, Ooguri and Crane-Yetter state sum, Quantization: Ashtekar-Lewandowski measure, spin networks, Barrett-Crane model, EPRL model.
- **(Spring 2019) Perturbative Algebraic Quantum Field Theory:** following the [book](#) of *Kasia Rejzner* with the same title.
- **(Fall 2018) Field Theory:** In particular: Introduction to quantum field theories according to *Costello*, Renormalization, Batalin-Vilkovisky formalism, Factorization algebras, L_∞ -spaces, Topological quantum mechanics, B-model, Riemannian metrics and Laplacians for generalized smooth distributions, Fedosov quantization, One-dimensional AKSZ theories.
- **(Spring 2018) Reading Course:** on the paper [arXiv:1604.06527](#) by *Dan Freed* and *Michael Hopkins* called *Reflection positivity and invertible topological phases*.
- **(Fall 2017) Research Presentations:** each participant gave a presentation to their research.

ORGANIZATION OF CONFERENCES

- **Higher Structures in QFT and String Theory (A Virtual Conference for Junior Researchers):** Organizer, Online Conference, July 12, 2021 – July 16, 2021, Website: sites.google.com/view/jrftconf2021
- **Zurich Graduate Colloquium in Mathematics (ZGCM):** Organizer, University of Zurich / ETH Zurich, Sep. 2018 – July 2020, Website: [ZGCM](#)

SCIENTIFIC REFEREE WORK

- **Letters in Mathematical Physics:** Springer Verlag, Scientific Journal
- **Forum of Mathematics, SIGMA:** Cambridge Core, Cambridge University Press, Scientific Journal
- **American Mathematical Society (AMS):** Mathematical Reviews
- **Journal of Mathematical Physics:** AIP Publishing, Scientific Journal
- **zbMATH (Zentral Blatt Mathematik):** Reviewer

HONORS

- **Naturforschende Gesellschaft Zürich:** First prize (Jugendpreis) for the Matura thesis: *Numerische Auswertungen der Zeitabhängigen Schrödingergleichung in einigen interessanten Potentialen*. Supervised by the Institute for Theoretical Astrophysics at the University of Zurich. [Laudatio by Dr. Fritz Gassmann](#). Awarded with CHF 500.

PERSONAL SKILLS

- **Programming:** Python, L^AT_EX, C++, Matlab, Mathematica, R
- **Languages:** German (native), Farsi (native), English (fluent), French (fluent)

REFERENCES

- | | |
|--|---|
| <ul style="list-style-type: none">• Prof. Dr. Alberto S. Cattaneo
Institut für Mathematik
Universität Zürich
Winterthurerstrasse 190
CH-8057 Zürich
Email: cattaneo@math.uzh.ch | <ul style="list-style-type: none">• Prof. Dr. Giovanni Felder
Departement für Mathematik
ETH Zürich
Rämistrasse 101
CH-8092 Zürich
Email: giovanni.felder@math.ethz.ch |
| <ul style="list-style-type: none">• Prof. Dr. Nicolai Reshetikhin
Department of Mathematics
Evans Hall 917
University of California, Berkeley
CA 94720-3840
Email: reshetik@math.berkeley.edu | <ul style="list-style-type: none">• Prof. Dr. Pavel Mnev
Department of Mathematics
University of Notre Dame
255 Hurley
IN 46556
Email: pmnev@nd.edu |