

SIMONE NOJA

PERSONAL DATA

PLACE AND DATE OF BIRTH: Milano | 1 October 1987
NATIONALITY: Italian
ADDRESS: Rufinusplatz 1, 69120, Heidelberg, Germany
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EMPLOYMENT

OCT 2020 - | **Heidelberg University**
Postdoctoral Research Fellow

MAY 2020 - OCT 2020 | **Università del Piemonte Orientale**
Postdoctoral Research Fellow

SEP 2018 - SEP 2019 | **Università degli Studi dell'Insubria**
Postdoctoral Research Fellow

MAR 2018 - SEP 2018 | **Università del Piemonte Orientale**
Research Fellow

HABILITATION

JAN 2023 | **Italian National Scientific Habilitation**
Associate Professor level - Algebra and Geometry (mat02/03)

EDUCATION

MAR 2018 | **Università degli Studi di Milano**
PhD in Mathematics
Supervisor: Prof. Lambertus van Geemen
Co-Supervisor: Prof. Sergio Luigi Cacciatori

APR 2014 | **Università degli Studi di Milano**
Laura Magistrale / Master in Theoretical Physics
Final grade: 110/110 cum laude
Supervisor: Prof. Lambertus van Geemen
Co-Supervisors: Prof. Sergio Cacciatori, Prof. Dietmar Klemm

JUL 2011 | **Università degli Studi di Milano**
Laurea Triennale / Bachelor in Physics
Final grade: 110/110 cum laude
Supervisor: Prof. Bassano Vacchini
Co-Supervisor: Ludovico Lanz

GRANTS, FUNDINGS AND RESEARCH RESPONSIBILITIES

JAN 2023 | **DFG Research Grant – ~218.400 €**
Project Title: *Homological Algebra of Supersymmetry: Locality, Unitarity, Duality*
Principal Investigators *S. Noja, I. Saberi & J. Walcher*

- DEC 2022 | **Pacific Institute for Mathematical Sciences (PIMS) – 20.000 \$**
Grant for Workshop Organization in the year 2023
Proposers: *C. Doran, S. Noja & J. Walcher*
- DEC 2022 | **Istituto Nazionale di Alta Matematica (INdAM) – 2.500 €**
Grant for Conferences, Schools and Workshop Organization in the year 2023
- JUL 2022 | **Managing Committee COST Action CA211009 – 1 million €**
“CaLISTA” Cartan Geometry, Lie, Integrable System, Quantum Groups Theories for Application”
<https://www.cost.eu/actions/CA21109/>
- JAN 2022 | **STRUCTURES - Cluster of Excellence – ~108.000 €**
Project Title: *Homological Algebra of Supersymmetry: Locality, Unitarity, Duality*
Principal Investigators: *S. Noja & J. Walcher*
- NOV 2014 | **Fondazione Angelo Della Riccia Research Grant – 3000 €**
Fondazione Angelo Della Riccia Research Grant Competition
Assigned for the year 2015

HONORS AND FURTHER ACADEMIC COMPETITIONS

- JAN 2024 | **Shortlisted - Università di Pisa**
Tenure track researcher (RTD-b) - Interview: 24/1/2024
- DEC 2023 | **Shortlisted - Università di Napoli**
Tenure track researcher (RTD-b) - Interview: 14/12/2023
- NOV 2023 | **Shortlisted - Politecnico di Milano**
Tenure track researcher (RTD-b) - Interview: 9/11/2023
- SEP 2023 | **Shortlisted - Università di Trento**
Tenure track researcher (RTD-b) - Interview and talk: 27/9/2023 & 26/9/2023
Declared eligible *ex-aequo* by the hiring committee
- APR 2023 | **Shortlisted - Politecnico di Torino**
Tenure track researcher (RTD-b) - Interview: 18/4/2023
- JUL 2014 | **Best Recent Graduate INFN Scholarship – 4800 €**
INFN Public Competition 16506/2014
Awarded in the research topic class “*Quantum Field Theory and String Theory*”

PUBLICATIONS AND PREPRINTS

1. K. Eder, J. Huerta, S. Noja, *Poincaré Duality on Supermanifolds, Higher Cartan Structures and Geometric Supergravity*, [ArXiv:2312.05224](https://arxiv.org/abs/2312.05224)
2. F. Hahner, S. Noja, I. Saberi, J. Walcher, *Six-Dimensional Supermultiplets from Bundles on Projective Spaces*, [ArXiv:2206.08388](https://arxiv.org/abs/2206.08388)
3. C.A. Cremonini, P.A. Grassi, S. Noja, *Cohomology of Lie Superalgebras: Forms, Integral Forms and Coset Superspaces*, *J. Lie Theory*, **33**, 2 (2023) 567–608 [JLT332/jlt33024](https://doi.org/10.1007/jlt33024)
4. S. Noja, *On the Geometry of Forms on Supermanifolds*, *Diff. Geom. Appl.*, **88** 101999 (2023) [10.1016/j.difgeo.2023.101999](https://doi.org/10.1016/j.difgeo.2023.101999)
5. S. Noja, *On BV Supermanifolds and the Super Atiyah Class*, *Eur. J. Math.*, **9** (1), 19 (2023) [10.1007/s40879-023-00603-6](https://doi.org/10.1007/s40879-023-00603-6)

6. S.L. Cacciatori, S. Noja, R. Re, *The Universal de Rham / Spencer Double Complex on a Supermanifold*, Doc. Math. **27**, 489-518 (2022) [10.25537/dm.2022v27.489-518](https://doi.org/10.25537/dm.2022v27.489-518)
7. S. Noja, R. Re, *A Note on Super Koszul Complex and the Berezinian*, Ann. Mat. Pura Appl. (1923 -) **201** (1), 403-421 (2022) [10.1007/s10231-021-01121-6](https://doi.org/10.1007/s10231-021-01121-6)
8. R. Catenacci, C.A. Cremonini, P.A. Grassi, S. Noja, *On Forms, Cohomology, and BV Laplacians in Odd Symplectic Geometry*, Lett. Math. Phys., **111**, 44 (2021) [10.1007/s11005-021-01384-3](https://doi.org/10.1007/s11005-021-01384-3)
9. R. Catenacci, P.A. Grassi, S. Noja, *Superstring Field Theory, Superforms and Supergeometry*, J. Geom. Phys., **148**, 103559 (2020) [10.1016/j.geomphys.2019.103559](https://doi.org/10.1016/j.geomphys.2019.103559)
10. R. Catenacci, P.A. Grassi, S. Noja, *A_∞ -Algebra from Supermanifolds*, Ann. Henri Poincaré **20** (12) 4163–4195 (2019) [10.1007/s00023-019-00854-8](https://doi.org/10.1007/s00023-019-00854-8)
11. S.L. Cacciatori, S. Noja, R. Re, *Non Projected Calabi-Yau Supermanifolds over \mathbb{P}^2* , Math. Res. Lett., **26** (4) (2019) 1027–1058 [10.4310/MRL.2019.v26.n4.a4](https://doi.org/10.4310/MRL.2019.v26.n4.a4)
12. S. Noja, *Non-Projected Supermanifolds and Embeddings in Super Grassmannians*, Universe **4** (11), 114, (2018) - Special Issue “*Super Geometry for Super Strings*” [10.3390/universe4110114](https://doi.org/10.3390/universe4110114)
13. S. Noja, *Topics in Algebraic Supergeometry over Projective Spaces*, Ph.D. Thesis, Università degli Studi di Milano, (2018) [phd-unimi-R11006](https://doi.org/10.1016/j.phd-unimi-R11006)
14. S.L. Cacciatori, S. Noja, *Projective Superspaces in Practice*, J. Geom. Phys., **130** (2018) 40–62 [10.1016/j.geomphys.2018.03.021](https://doi.org/10.1016/j.geomphys.2018.03.021)
15. S. Noja, *Supergeometry of Π -Projective Spaces*, J. Geom. Phys., **124** (2018) 286–299 [10.1016/j.geomphys.2017.11.010](https://doi.org/10.1016/j.geomphys.2017.11.010)
16. S. Noja, S. L. Cacciatori, F. Dalla Piazza, A. Marrani, R. Re, *One-Dimensional Super Calabi-Yau Manifolds and their Mirrors*, JHEP **1704** (2017) 094 [10.1007/JHEP04\(2017\)094](https://doi.org/10.1007/JHEP04(2017)094)

INVITED SPEAKER TO CONFERENCES

- | | |
|---------------|---|
| 19 JUNE 2023 | Emergent Geometries from Strings and Quantum Fields
Galileo Galilei Institute - Arcetri |
| 6 JUNE 2023 | CaLISTA Kick-off Meeting
Università degli Studi di Bologna |
| 27 MARCH 2023 | SuperGeometry and SuperModuli
Simons Center for Geometry and Physics - Stony Brook |
| 27 JUNE 2022 | Workshop on Supermoduli and Superstrings
SISSA - Trieste |
| 22 OCT 2021 | CP7 - “STRUCTURES Exzellenzcluster” Kick-Off Event
University of Heidelberg |

- 9 JUL 2021 | **Workshop on Algebraic Geometry and Physics: Supermoduli & Superstrings**
Institute for Geometry and Physics (ICTP / SISSA)
- 5 MAY 2020 | **Super Days in Alessandria - Virtual Edition**
Università del Piemonte Orientale - Alessandria
- 23 SEP 2019 | **Workshop on Supermoduli**
SISSA and ICTP - Trieste
- 29 MAY 2018 | **Giornate di Geometria Algebrica ed Argomenti Correlati XIV**
Università degli Studi di Genova
- 6 JUL 2017 | **An Algebraic Geometry Day in Como**
Università degli Studi dell'Insubria

INVITED SEMINARS AND COLLOQUIA

- 20 OCT 2023 | **RTG Colloquium in Heidelberg**
Karlsruhe Institute of Technology & Heidelberg University
- 12 OCT 2023 | **Mathematical Physics Research Seminar**
Charles University - Prague
- 23 FEB 2023 | **Geometry in Como**
Università degli Studi dell'Insubria
- 19 DEC 2022 | **Mathematical Physics Research Seminar**
Università di Pavia
- 13 JUNE 2022 | **Center for Quantum Mathematics Research Seminar**
University of South Denmark - Odense
- 25 MAY 2022 | **TQTF Club**
Online - Hosted at University of Lisbon
- 19 MAY 2022 | **Joint ETH - UZH Seminar**
ETH & UZH Universität - Zürich
- 4 MAR 2022 | **Seminar on Algebra, Geometry and Physics**
Max Plank Institute - Bonn
- 1 MAR 2022 | **Local Research Seminar**
Università del Piemonte Orientale - Alessandria
- 9 NOV 2021 | **Local Research Seminar**
University of Mainz
- 2 JUN 2021 | **CP7 Seminar - "Structures Exzellenzcluster"**
University of Heidelberg
- 6 MAY 2021 | **Local Research Seminar**
University of Heidelberg - invited by Arthur Hebecker & Manfred Salmhofer
- 23 APR 2021 | **Supergeometry Meeting II**
(Hosted in) Università degli Studi di Bologna
- 16 APR 2021 | **Supergeometry Meeting I**
(Hosted in) Università degli Studi di Bologna

- 5 NOV 2020 | **“Structures” Exzellenzcluster Meeting**
(Hosted in) University of Heidelberg
- 22 JUN 2020 | **Joint Heidelberg-Munich-Wien (HMW) Seminars**
(Hosted in) University of Wien
- 23 MAY 2019 | **Geometry and Mathematical Physics Group Seminar II**
University of Pennsylvania
- 22 MAY 2019 | **Geometry and Mathematical Physics Group Seminar I**
University of Pennsylvania
- 18 NOV 2018 | **Local Research Seminar**
Universitat de Valencia
- 15 MAY 2018 | **Local Research Seminar**
Università degli Studi di Torino
- 18 OCT 2017 | **Local Research Seminar**
Università del Piemonte Orientale

CONFERENCES AND SCHOOLS ORGANIZATION

- JUL 17 - 21, 2023 | **Domoschool: International School of Mathematics and Physics**
“Einstein Equations in the Dark Side of the Universe”
Domodossola - Italy
- JUN 12 - 16, 2023 | **Workshop “Hodge Theory, Mirror Symmetry, and Physics of Calabi-Yau Moduli”**
Heidelberg Universität - Germany (in collaboration with PIMS)
- JUL 18 - 22, 2022 | **Domoschool: International School of Mathematics and Physics**
“Gauge Theories and the Langlands Program”
Domodossola - Italy
- OCT 4 - 8, 2021 | **Workshop “Pure Spinors, Superalgebras and Holomorphic Twists”**
Heidelberg Universität - Germany
- JUL 15 - 19, 2019 | **Domoschool: International School of Mathematics and Physics**
“Einstein Equations: Physical and Mathematical Aspects of General Relativity II”
Domodossola - Italy
- JUL 16 - 20, 2018 | **Domoschool: International School of Mathematics and Physics**
“Einstein Equations: Physical and Mathematical Aspects of General Relativity I”
Domodossola - Italy

VISITING (MORE THAN 2 WEEKS)

- JUNE 2023 | **Galileo Galilei Institute**
Invited by Prof.'s Ron Donagi and Antonio Grassi
- APRIL 2023 | **Simons Center for Geometry and Physics**
Invited by Prof.'s Alexander Polishchuk and Samuel Grushevsky
- SEP 2022 | **University of Pennsylvania (UPenn)**
Invited by Prof. Ron Donagi

- MAY 2022 | **ETH - Zürich**
Invited by Prof. Giovanni Felder
- MAY 2019 | **University of Pennsylvania (UPenn)**
Invited by Prof. Ron Donagi
- NOV 2018 | **Universitat de Valencia (UV)**
Invited by Prof. Marian Lledó
- JAN 2015 | **University of Pennsylvania (UPenn)**
Guest Graduate Student of Prof. Ron Donagi

TEACHING

PH.D. COURSE

- SPRING 2019 | **Algebraic and Geometric Structures and Some of Their Use in Contemporary Physics**
Ph.D. Course
Università degli Studi dell'Insubria
Front Lectures

GRADUATE LEVEL COURSES

- WINTER 2023 | **Twists on Strings Pro-Seminar**
Master Course
Heidelberg Universität
Front Lectures / Student Tutoring
- SPRING 2023 | **Mathematical Aspects of String Theory II**
Master Course
Heidelberg Universität
Front Lectures
- FALL 2022 | **Mathematical Aspects of String Theory I**
Master Course
Heidelberg Universität
Front Lectures
- FALL 2021 | **Complex Geometry**
Advanced Bachelor / Master Course
Heidelberg Universität
Front Lectures / Exercise Sessions
- SPRING 2021 | **Supergeometry Pro-Seminar**
Advanced Master / Ph.D. Seminar
Heidelberg Universität
Front Lectures / Students Tutoring

UNDERGRADUATE COURSES

- SPRING 2024 | **Representations of Classical Groups**
Advanced Bachelor
Heidelberg Universität
Front Lectures

FALL 2022	Symmetric Functions Pro-Seminar Advanced Bachelor Heidelberg Universität Front Lectures / Students Tutoring
SPRING 2022	Mathematical Quantum Mechanics Pro-Seminar Advanced Bachelor Heidelberg Universität Front Lectures / Students Tutoring
FALL 2019	Teaching Assistant: Laboratory of Basic Mathematics Università degli Studi di Milano Front Lectures and E-Learning Tutoring <i>Head of Course:</i> Prof. Nicoletta Bressan
SPRING 2019	Teaching Assistant: Mathematical Methods for Physics Università degli Studi dell'Insubria Front Lectures and Tutoring <i>Head of Course:</i> Prof. Sergio Cacciatori
FALL 2018 SPRING 2018	Teaching Assistant: Calculus Università degli Studi di Milano E-Learning Tutoring <i>Head of Course:</i> Prof. Gilberto Bini
FALL 2017 FALL 2016	Teaching Assistant: Laboratory of Basic Mathematics Università degli Studi di Milano Front Lectures and E-Learning Tutoring <i>Head of Course:</i> Prof. Gilberto Bini

THESIS SUPERVISIONS AND MENTORING

RAPHAEL SENGHAAS	Heidelberg Universität Co-Supervisor of Ph.D. thesis - Expected ~2026
CHARLES PRAUM	Heidelberg Universität Co-Supervisor of B.Sc. thesis - "An Alternative Approach to the Covariant Quantisation of the Bosonic String" - 2023
ERIK FINK	Heidelberg Universität Co-Supervisor of M.Sc. thesis - "Localization Theorems in Supergeometry" - 2023
ANDREA GROSSUTTI	Heidelberg Universität & Università di Padova Co-Supervisor of M.Sc. thesis (informal) - "Formulation of Supersymmetry Theories Using Integral Forms" - 2021
ENEAS RIVA	Università degli Studi dell'Insubria Co-Supervisor of M.Sc. thesis (informal) - "Super Particles on a Simple Superspace" - 2019

SERVICE TO THE PROFESSION

- HIRING COMMITTEE FOR TWO FULL PROFESSORSHIP (W3) IN ALGEBRAIC & ARITHMETIC GEOMETRY - HEIDELBERG UNIVERSITY
- HIRING COMMITTEE FOR THE DOCTORAL SCHOOL - HEIDELBERG UNIVERSITY
- ORGANIZER OF JOINT SEMINAR "HEIDELBERG - MAINZ - MÜNCHEN - WIEN" - HEIDELBERG UNIVERSITY <https://web.mathi.uni-heidelberg.de/physmath/physmath>
- REFEREE - Adv. Math., Commun. Math. Phys., J. Geom. Phys. (multiple times), J. Math. Phys., Adv. Theor. Math. Phys., Int. J. Geom. Methods Mod. Phys. (multiple

times), J. Alg., J. Lie Theory

AFFILIATIONS

- ISTITUTO NAZIONALE DI ALTA MATEMATICA “FRANCESCO SEVERI” - INDAM
GNSAGA - Gruppo Nazionale per le Strutture Algebriche Geometrie e le loro Applicazioni
- “STRUCTURES” - CLUSTER OF EXCELLENCE
Young Researcher Convent

LANGUAGES

ENGLISH: Fluent (Level C2), TOEFL[®] *ibt* 110/120

ITALIAN: Native Speaker

REFERENCES

UGO BRUZZO - SISSA

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SERGIO CACCIATORI - Università dell'Insubria

sergio.cacciatori@uninsubria.it

RON DONAGI - University of Pennsylvania

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JOHANNES WALCHER - Universität Heidelberg

walcher@mathi.uni-heidelberg.de

16/1/2024