

# JONAS SCHNITZER

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## Personal

Born on September 15, 1990.

German Citizen.

## Current Position

wissenschaftlicher Mitarbeiter (Post-Doc), University of Freiburg

## Education

PhD student, University of Salerno 2016-2019

*Thesis:* Local and Global Properties of Jacobi Related Geometries.

*Thesis Advisor:* Prof. Luca Vitagliano

Master Degree in Mathematical Physics (120 ECTS credits), University of Würzburg, 2014-2016

*Thesis:* A simple algebraic construction of Drinfel'd twist.

*Thesis Advisor:* Prof. Stefan Waldmann and Dr. Chiara Esposito

Bachelor Degree in Mathematical Physics (180 ECTS credits), University of Würzburg, 2010-2014

*Thesis:* Zur Rollabbildung von Hyperboloiden.

*Thesis Advisor:* Prof. Knut Hüper

## Prices, Fellowships and Awards

*Otto-Volk-Medaille*, University of Würzburg, for the master thesis.

*PhD fellowship at the University of Salerno for foreign students*

*PhD fellowship at LA Sapienza di Roma* (rejected)

## Research

My main research interests are:

### *Topics*

- i.)* Mathematical Physics
- ii.)* Contact, symplectic and related Geometries
- iii.)* Generalized Geometry
- iv.)* Deformation Quantization and Quantum Groups
- v.)* Quantum and Classical Reduction

## Collaborators

Antonio de Nicola *University of Salerno*

Chiara Esposito, *University of Salerno*

Andreas Kraft *University of Salerno*

Alfonso Tortorella, *KU Leuven*

Luca Vitagliano, *Univeristy of Salerno*

Stefan Waldmann, *University of Würzburg*

Miquel Cueva, *Univeristy of Göttingen*

## Publications

- i.) C. Esposito, J. Schnitzer, S. Waldmann. *A Universal Construction of Universal Deformation Formulas, Drinfel'd Twists and their Positivity*. Pacific J. Math. 291 (2017), 2, 319–358 pages
- ii.) J. Schnitzer, L. Vitagliano. *The Local Structure of Generalized Contact Bundles* Int. Math. Res. Not.(IMRN)(2020), 20, 6871—6925 pages
- iii.) J. Schnitzer. *Weakly Regular Jacobi Structures and Generalized Contact Bundles* Ann. Global Anal. Geom.(2019), 56, 221–244 pages
- iv.) J. Schnitzer. *Characteristic (Fedosov-)class of a twist constructed by Drinfel'd* Lett. Math. Phys. (2020), 110, 2353–2361 pages
- v.) C.Esposito, A.Kraft, J.Schnitzer. *The strong homotopy structure of Poisson reduction* J. Noncommutative Geom. (2022), 16(3), 927—966 pages
- vi.) J.Schnitzer, A. Tortorella. *Weak Dual Pairs in Dirac-Jacobi Geometry* Comm. Cont. Math. (2022), online ready

## Preprints

- i.) J.Schnitzer. *Normal Forms for Dirac-Jacobi bundles and Splitting Theorems for Jacobi Structures* <https://arxiv.org/abs/1901.00207>(to appear in *Math.Z.*)
- ii.) A.Kraft, J.Schnitzer. *The Homotopy Class of twisted  $L_\infty$ -morphisms* <https://arxiv.org/abs/2102.10645>
- iii.) C.Esposito, A.Kraft, J.Schnitzer. *The strong homotopy structure of BRST reduction* <https://arxiv.org/abs/2202.08750>
- iv.) A.Kraft, J.Schnitzer. *An introduction to  $L_\infty$ -algebras and their homotopy theory* <https://arxiv.org/abs/2207.01861?context=math>

## Attended Meetings and Schools

- i.) (Oct 2015) *"From Poisson Geometry to Quantum Fields on Noncommutative Spaces"*, Autumn School, Würzburg (Germany)
- ii.) (Jun 2017) *"Geometry and Algebra of PDEs"*, Conference, Tromsø (Norway)
- iii.) (Jul 2017) *"Diffiety School"*, Summer School, Lizzano (Italy)

- iv.) (Sep 2017) *"Noncommutative Geometry and Higher Structures"*, Conference, Würzburg (Germany)
- v.) (Nov 2017) *"Formal Theory of PDEs"*, Mini Workshop, Salerno(Italy)
- vi.) (Jun 2018) *"VI Workshop on Poisson Geometry and Related Topics"*, Conference, Sao Carlos (Brazil)
- vii.) (July 2018) *"Poisson 2018 - International Conference on Poisson Geometry "*, Conference and Summer School, Toronto (Canada)
- viii.) (Sep 2018) *"INdAM Workshop: Poisson geometry and Higher structures"*, Conference, Rome (Italy)
- ix.) (Dec 2018) *Poisson aan de Waal*, Conference, Nijmegen(Netherlands)
- x.) (Apr 2019) *Quantum structure of space-time: Generalized geometry and symmetries*, Conference, Bayrischzell(Germany)
- xi.) (Apr 2019) *"Algebraic and Geometric Aspects in Quantum Field Theory"*, Conference, Freiburg (Germany).
- xii.) (Oct 2019) *"Deformations and Rigidity in Algebra, Geometry and Analysis"*, Autumn School, Würzburg (Germany)
- xiii.) (Oct/Nov 2019) *Workshop on Poisson and Contact Geometry*, Conference, Timisoara (Romania)
- xiv.) (Sep 2020) *Junior Global Poisson Workshop 2020*, Workshop, online (worldwide)
- xv.) (May 2021) *Junior Global Poisson Workshop 2021*, Workshop, online (worldwide)
- xvi.) (Aug 2021) *GEOQUANT 2021*, Conference and Summerschool, Freiburg (Germany)
- xvii.) (Jan 2022) *Lie Theory and Poisson Geometry*, Conference, CIRM (France)
- xviii.) (Jun 2022) *Noncommutative Geometry and Higher Structures*, Conference, Scalea (Italy)
- xix.) (Aug/Sep 2022) *Higher Structures in Deformation theory* , Conference, Freiburg (Germany)

## Talks and Poster Presentations

Talk: *"Generalized Geometry in odd Dimensions"* at: Noncommutative Geometry and Higher Structures, Würzburg

Talk: *"Generalized Contact Bundles"* at: VI Workshop on Poisson Geometry and Related Topics, Sao Carlos

Poster: *"Generalized Contact Bundles"* at: Poisson 2018 - International Conference on Poisson Geometry, Toronto

Talk: *"Moment maps, their quantization and reduction"* at: Higher Differential Geometry Seminar (Max-Planck-Institut für Mathematik), Bonn

Poster: *"Existence and Classification of Quantum Moment Maps via Formality"* at: Deformations and Rigidity in Algebra, Geometry and Analysis, Würzburg

Talk: *Semi-local structure of Jacobi-related Geometries* at: Workshop on Poisson and Contact Geometry, Timisoara

Talk: *Strong homotopy structure of Poisson reduction* at: Friday Fish Seminar, Utrecht/online

Talk: *The homotopy class of twisted  $L_\infty$ -morphisms and the Kontsevich-Dolgushev Formality* at: *Lie Theory and Poisson Geometry*

Talk: *The strong Homotopy Structure of Phase Space Reduction in Deformation Quantization* at: *Non-commutative Geometry and higher structures*

## Research Stays and Visits

(Sep 2015) *Mathematisches Forschungsinstitut Oberwolfach*, Oberwolfach(Germany), short term visit, collaborator: Chiara Esposito

(Apr-Jul 2018) *IMPA - Instituto de Matemática Pura e Aplicada*, Rio de Janeiro(Brazil), long term visit, local supervisor: Henrique Bursztyn.

(Jun 2018) *University of Sao Paulo*, Sao Paulo(Brazil), Host: Cristian Ortiz

(Sep 2018) *KU Leuven*, Leuven (Belgium), Hosts: Alfonso Tortorella, Marco Zambon

(Apr 2019) *Center of Symmetry and Deformation*, Copenhagen(Denmark), Host: Ryszard Nest

(Apr 2019) *KU Leuven*, Leuven (Belgium), Hosts: Alfonso Tortorella, Marco Zambon

## Conferences, Workshops and Seminars organized

i.) (Nov 2017) "*Formal Theory of PDEs*", Mini Workshop, Salerno(Italy).

ii.) Group seminar *Geometria@Unisa*, weekly, Salerno.

iii.) (Aug 2021) *GEOQUANT 2021-International School and Conference*, Freiburg (Germany).

iv.) (Aug/Sep 2022) *Higher Structures in Deformation theory*, Conference, Freiburg (Germany)

## Teaching Experiences

### *University of Würzburg*

i.) JIM Erklärhiwi (tutor for bachelor students)

ii.) Ordinary Differential Equations for Teachers (Problem Session), Summerterm 2013

iii.) Mathematics I for Physics and Computer Sciences (Problem Session), Winterterm 2013/2014

iv.) Introduction to Differential Geometry (Problem Session), Summerterm 2014

v.) Calculus I (Problem Session), Winterterm 2014/15

vi.) Calculus II (Problem Session), Summerterm 2015

vii.) Linear algebra I (Problem Session), Winterterm 2015/16

viii.) Differential Geometry (Problem Session), Winterterm 2015/16

ix.) Linear Algebra II (Problem Session), Summerterm 2016

x.) Geometric Mechanics (Problem Session), Summerterm 2016

### *University of Freiburg*

i.) Algebraic Topology (teaching assistant), winter term 2019/20

ii.) Algebraic Topology II (teaching assistant), summer term 2020

iii.) Seminar on Manifolds (teaching assistant), summer term 2020

iv.) Analysis III for Teachers (teaching assistant), winter term 2020/21

v.) Algebra (Problem Session), winter term 2020/21

- vi.*) Functional Analysis (teaching assistant), summer term 2021
- vii.*) Special lecture on Manifolds (teaching assistant), summer term 2021
- viii.*) Analysis I (teaching assistant), winter term 2021/22
- ix.*) Seminar on Functional Analysis and Geometry, winter term 2021/22
- x.*) Seminar on universal properties (organizer), summer term 2022
- xi.*) Analysis II (teaching assistant), summer term 2022
- xii.*) Poisson geometry and deformation quantization (lecturer), winter term 2022/23

## Miscellaneous

### *Tongues*

German (*Mother Tongue*)

English (Fluent)

Spanish (Basic)

French (Basic)

Italian (Basic)

### *Computer Skills*

Windows and Linux, Matlab, Mathematica,  $\text{\LaTeX}$ .

Last updated: January 28, 2023