Thomas Weber

Personal Data

Place and Date of Birth:	Würzburg, Germany | 05/10/1990
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Main Research Topics

- Noncommutative differential geometry
- Hopf algebras and their representation theories
- Deformation quantization and Poisson geometry
- Supergeometry and field theory

Work Experience

Jul 2022 - Current	Postdoctoral researcher Department of Mathematics "Giuseppe Peano", **University of Turin**.
Jul 2021 - Jun 2022	Postdoctoral researcher Dipartimento di Scienze e Innovazione Tecnologica (DiSIT), **University of Eastern Piedmont**.
Mar 2021 - Jun 2021	Postdoctoral researcher Department of Mathematics, **University of Bologna**.
Oct 2020 - Jan 2021	Postdoctoral researcher Dipartimento di Scienze e Innovazione Tecnologica (DiSIT), **University of Eastern Piedmont**.
Nov 2019 - Apr 2020	Visiting Researcher Dipartimento di Scienze e Innovazione Tecnologica (DiSIT), **University of Eastern Piedmont**.

Education

Nov 2016 - Oct 2019	PhD in Mathematics, **University of Naples "Federico II"**.
Thesis:	Braided Commutative Geometry and Drinfel'd Twist Deformations
Supervisors:	Prof. Gaetano Fiore and Prof. Francesco D'Andrea
Thesis Defense:	12/02/2020
Apr 2014 - Jul 2016	Master of Science in Mathematical Physics, **Julius Maximilian University of Würzburg**.
Thesis:	Star Products that can not be induced by Drinfel'd Twists
Supervisors:	Prof. Stefan Waldmann and Dr. Chiara Esposito

Publications and Preprints

1. Fiore, G., Weber, T.: *Twisted geometry for submanifolds of* $\mathbb{R}^n$.
   PoS Proc. Sci., arXiv:2205.00216, April 2022.
2. Aschieri, P., Fioresi, R., Latini, E., Weber, T.: *Differential Calculi on Quantum Principal Bundles over Projective Bases.*
   Preprint arXiv:2110.03481, October 2021.

3. Fiore, G., Weber, T.: *Twisted submanifolds of $\mathbb{R}^n$.*
Lett. Math. Phys. 111(76), June 2021.
doi.org/10.1007/s11005-021-01418-w

4. Fiore, G., Franco, D., Weber, T.: *Twisted Quadrics and Algebraic Submanifolds in $\mathbb{R}^n$.*
Math. Phys. Anal. Geom., 23(38), October 2020.
doi.org/10.1007/s11040-020-09361-3

5. Weber, T.: *Braided Cartan calculi and submanifold algebras.*
J. Geom. Phys., 150, 103612, April 2020.
doi.org/10.1016/j.geomphys.2020.103612

6. Weber, T.: *Braided Commutative Geometry and Drinfel'd Twist Deformations.*
PhD Thesis, preprint arXiv:2002.11478, February 2020.

7. D'Andrea, F., Weber, T.: *Twist star products and Morita equivalence.*
C. R. Acad. Sci. Paris, 355(11):1178-1184, November 2017.
doi.org/10.1016/j.crma.2017.10.012

8. Bieliavsky, P., Esposito, C., Waldmann, S., Weber, T.: *Obstructions for Twist Star Products.*
Lett. Math. Phys., 108(5):1341–1350, November 2017.
doi.org/10.1007/s11005-017-1034-z

9. Weber, T.: *Star Products that can not be induced by Drinfel'd Twists.*
Master Thesis, preprint arXiv:1608.02504, August 2016.

Research Stays and Long Term Visits

Mai 29 - June 03, 2022:	Visiting Prof. Majid, Queen Mary University of London, ENG.
Mai 02 - 13, 2022:	Visiting Prof. Ó Buachalla & Prof. Jurco, Charles University of Prague, CZE.
Nov 2019 - Apr 2020:	Visiting Researcher, University of Eastern Piedmont, Alessandria, IT.
Oct - Nov 2017:	Visiting Prof. Ping Xu, Penn State University, Pennsylvania, USA.

Prices, Fellowships and Awards

2017	Otto-Volk Medal, Julius Maximilian University of Würzburg.
2016	PhD fellowship, University of Naples "Federico II". PhD fellowship, Sapienza University of Rome (rejected by candidate).

Activities

Speaker at Conferences and Workshops

Mai 13 - 16, 2022	**Higher Structures in Quantum Field and String Theory**, Bayrischzell (DE). Title: *Principal differential calculi over projective bases*
Jan 15 - 22, 2022	**Winter School Geometry and Physics**, Srni (CZ). Title: *Differential Calculi on Quantum Principal Bundles over Projective Bases*
Nov 29 - Dec 01, 2021	**Noncommutative Geometry and Physics. Quantum Spacetimes**, Krakow (PL). Title: *Levi-Civita connection in noncommutative Riemannian geometry*
Sep 20 - 27, 2021	**Workshop on Quantum Geometry, Field Theory and Gravity**, Corfu (GR). Title: *Noncommutative Levi-Civita connections on covariant spaces*
Nov 27 - 30, 2018	**International Conference on "Noncommutative Geometry: Physical and Mathematical Aspects Of Quantum Space-Time and Matter"**, Kolkata (IN). Title: *Deformation Quantization of Symplectic Manifolds via Symmetries*
Apr 20 - 23, 2018	**Workshop on Noncommutativity and Physics**, Bayrischzell (DE). Title: *Drinfel'd Twist Deformation Quantization on Symplectic Manifolds*

Feb 19 - 23, 2018	**Workshop in Deformation Theory III,** Bari (IT). Title: *Drinfel'd Twist Deformation Quantization on Symplectic Manifolds*
Sep 11 - 15, 2017	**Noncommutative Geometry & Higher Structures**, Würzburg (DE). Title: *Equivariant Morita Equivalence and Twist Star Products*
Mar 13 - 17, 2017	**Topological & geometric aspects of quantum spaces**, SISSA, Trieste (IT). Title: *Obstructions for Twist Star Products*
Feb 27 - Mar 03, 2017	**Noncommutative Geometry and Applications**, ICTP, Trieste (IT). Title: *Obstructions for Twist Star Products*

Seminar Talks

June 01, 2022	**Levi-Civita connections for non-central metrics on quantum groups**, Queen Mary University of London.
May 06, 2022	**Principal differential calculi over projective bases**, Charles University of Prague.
Apr 01, 2022	**Star products induced by Drinfel'd twists**, Davis University of California.
Feb 23, 2022	**F-Hopf algebras and quantum computing**, University of Bologna.
Dec 17, 2021	**The Hopf Algebra of Trees and Renormalization of Quantum Field Theory**, web-seminar, University of Würzburg.
May 27, 2021	**Noncommutative differential geometry on Hopf algebras**, web-seminar, Math in the Mill 2021.
May 21, 2021	**Braided commutative geometry and supergeometry**, web-seminar, University of Bologna.
May 11, 2021	**Noncommutative differential geometry and braided commutative Riemannian geometry**, University of Bologna.
Mar 31, 2021	**Cartan calculus and Riemannian geometry on braided commutative algebras**, web-seminar, Queen Mary University of London.
Jul 03, 2020	**The Braided Cartan Calculus and Braided Commutative Geometry**, web-seminar, University of Würzburg.
May 07, 2020	**Braided Commutative Geometry & Drinfel'd Twist Deformations**, web-seminar, Charles University in Prague.
Dec 12, 2019	**Braided Geometry and Drinfel'd Twist Equivalences**, University of Naples "Federico II".
Nov 16, 2018	**Twisted Cartan Calculus on smooth Submanifolds**, University of Würzburg.
Oct 24, 2017	**Equivariant Morita Equivalence & Twist Star Products**, Penn State University.
May 05, 2017	**Morita vs Drinfel'd - The Empire Twists Back**, University of Würzburg.
Nov 30, 2016	**Drinfel'd Twist Deformation Quantization**, University of Salerno.
Nov 24, 2016	**The Fedosov Construction**, University of Naples "Federico II".
Nov 10, 2016	**Obstructions for Twist Star Products**, University of Naples "Federico II".
Oct 23, 2015	**Obstructions of Drinfel'd Twist Deformation**, University of Würzburg.

Conferences, Schools and Workshops attended

Jun 13 - 15, 2022	**Theories of the Fundamental Interactions**, Venice (IT).
May 13 - 16, 2022	**Higher Structures in Quantum Field and String Theory**, Bayrischzell (DE).
Jan 15 - 22, 2022	**Winter School Geometry and Physics**, Srni (CZ).
Nov 29 - Dec 01, 2021	**Noncommutative Geometry and Physics. Quantum Spacetimes**, Krakow (PL).
Nov 20 - 21, 2021	**INFN Theory Group Retreat**, Santo Stefano Belbo (IT).
Sep 20 - 27, 2021	**Workshop on Quantum Geometry, Field Theory and Gravity**, Corfu (GR).
Sep 17 - 21, 2021	**Humboldt Kolleg on Quantum Gravity and Fundamental Interactions**, Corfu (GR).
July 07, 2021	**Advances in Hopf Algebroids**, online conference, Madrid (ES).
May 27 - 28, 2021	**Math in the Mill 2021**, online conference, Würzburg (DE).
Oct 12 - 16, 2020	**An Introduction to Quantum Field Theory in Curved Spacetime**, online lecture series, London Mathematical Society.
Oct 7 - 11, 2019	**Deformations & Rigidity in Algebra, Geometry & Analysis**, Würzburg (DE).
Sep 16 - 20, 2019	**Noncommutative manifolds and their symmetries**, Scalea (IT).
May 20 - 23, 2019	**Some topic in Deformation Theory and DGLAs**, Salerno (IT).
Apr 26 - 28, 2019	**Math in the Mill 2019**, Sondheim (DE).
Apr 12 - 16, 2019	**Quantum structure of space-time: Generalized geometry and symmetries**, Bayrischzell (DE).
Nov 27 - 30, 2018	**International Conference on "Noncommutative Geometry: Physical & Mathematical Aspects Of Quantum Space-Time and Matter"**, Kolkata (IN).
Apr 20 - 23, 2018	**Workshop on Noncommutativity and Physics**, Bayrischzell (DE).
Feb 19 - 23, 2018	**Workshop in Deformation Theory III**, Bari (IT).
Oct 28, 2017	**Joint Symplectic Seminar**, State College (USA).
Sep 11 - 15, 2017	**Noncommutative Geometry & Higher Structures**, Würzburg (DE).
Jul 31 - Aug 11, 2017	**School and conference on geometry and quantization**, Aarhus (DK).
Jul 20 - 31, 2017	**XX Summer Diffiety School**, Lizzano in Belvedere (IT).
Apr 07 - 11, 2017	**Current Problems in Theoretical Physics**, Vietri sul Mare (IT).
Mar 13 - 17, 2017	**Topological & geometric aspects of quantum spaces**, SISSA, Trieste (IT).
Feb 27 - Mar 03, 2017	**Noncommutative Geometry and Applications**, ICTP, Trieste (IT).
Jan 30 - Feb 03, 2017	**Quantum Spacetime 2017**, Porto (PT).
Oct 05 - 10, 2015	**From Poisson geometry to quantum fields on nc spaces**, Würzburg (DE).

Teaching Experiences

University of Würzburg

WT 2015/16 - ST 2016	Linear algebra I & II (Problem Session)
WT 2014/15 - ST 2015	Calculus I & II (Problem Session & Tutorial)
WT 2013/14 - ST 2015	Mathematics I & II for Physics & Computer Sciences (Problem Session & Tutorial)
ST 2013	Differential Equations for Teachers (Problem Session & Tutorial)

- JIM Erklärhiwi (Tutor for Bachelor Students).

Languages

German (Mothertongue), English (Fluent), Italian (Basic Knowledge).

Computer Skills

Windows and Linux, LaTeX, C++, Matlab, Mathematica.

Last updated: July 7, 2022