

MAX REINHOLD JAHNKE

PERSONAL INFORMATION

Born in Brazil, 13 March 1985
email max.jahnke@uni-koeln.de
website <https://jahnke.wordpress.com/>

EDUCATION

Doctor of Philosophy in Applied Mathematics
Aug 2013–Dec 2018 University of São Paulo, Brazil
School: Institute of Mathematics and Statistics.
Ph.D. Dissertation: *Top-degree solvability in hypocomplex involutive structure and the cohomology of left-invariant involutive structures on compact Lie groups.*
Advisor: Prof. Paulo D. CORDARO.

Research Internship
Sep 2017–Dec 2017 Temple University, United States of America
School: Department of Mathematics
Research project: *Topics in Global Analysis, Geometry and Algebraic Topology.*
Supervisor: Prof. Gerardo A. MENDOZA.

Masters of Science in Applied Mathematics
Aug 2011–Aug 2013 University of São Paulo, Brazil
School: Institute of Mathematics and Statistics.
Master's Thesis: *Gevrey Asymptotics and Applications to Ordinary Differential Equations.*
Advisor: Prof. Paulo D. CORDARO.

Bachelor of Science in Mathematics
Aug 2007–Jul 2011 University of São Paulo, Brazil
School: Institute of Mathematics and Statistics.
Senior thesis: *Topics in Differential Topology.*
Advisor: Prof. Manuel V. de P. GARCIA.

ACADEMIC POSITIONS

Postdoctoral Researcher in Mathematics
Oct 2023–Current Universität zu Köln, Germany
School: Department of Mathematics.
Project: *Left-invariant involutive structures.*
Supervisor: Prof. George MARINESCU.

Postdoctoral Researcher in Mathematics
Oct 2022–Sep 2023 Philipps-Universität Marburg, Germany
School: Department of Mathematics.
Project: *Left-invariant involutive structures.*
Supervisor: Prof. Sönke ROLLENSKE.

Postdoctoral Researcher in Mathematics
Jan 2019–Sep 2022 Federal University of São Carlos, Brazil
School: Department of Mathematics.
Project: *Normalization and solvability in Denjoy-Carleman classes of vector fields near trapped orbits.*
Supervisor: Prof. Gustavo HOEPFNER.

Visiting Scholar
Jan 2022–May 2022 Rutgers University, New Brunswick, USA
School: Department of Mathematics.
Project: *Top-degree local solvability for CR hypersurfaces.*
Supervisor: Prof. Xiaojun HUANG.

Visiting Scholar
Jan 2020–Jan 2021 Rutgers University, Camden, USA
School: Department of Mathematics.
Project: *Levi-flat CR structures on compact Lie groups.*
Supervisor: Prof. Howard JACOBOWITZ.

PRE-PRINTS

Research Article
H. JACOBOWITZ, M. R. JAHNKE, and K. WEHLER. *Cohomology of CR structures on compact Lie groups.*
Submitted. arXiv: <https://arxiv.org/abs/2606.12377>

Research Article
G. ARAÚJO, I. A. FERRA, L. F. RAGOGNETTE, and M. R. JAHNKE. *Real involutive systems on compact Lie groups.* Submitted. arXiv: <https://arxiv.org/pdf/2606.12377>

LIST OF PUBLICATIONS WITH PEER REVIEW PROCESS

- Research Article* M. R. JAHNKE. *Closed elliptic structures on compact semisimple Lie groups*. Proceedings of the American Mathematical Society (2026). DOI: <https://doi.org/10.1090/proc/17563>
- Research Article* N. BRAUN RODRIGUES and M. R. JAHNKE. *A class of globally analytic hypoelliptic operators on compact Lie groups*. The Journal of Geometric Analysis (2025). DOI: <https://doi.org/10.1007/s12220-025-02100-6>
- Research Article* G. ARAÚJO, I. A. FERRA, M. R. JAHNKE, L. F. RAGOGNETTE . *Global solvability and cohomology of tube structures on compact manifolds*. Math. Ann. (2024). DOI: [10.1007/s00208-024-02804-0](https://doi.org/10.1007/s00208-024-02804-0)
- Research Article* H. JACOBOWITZ and M. R. JAHNKE. *Levi-flat CR structures on compact Lie groups*. Annals of Global Analysis and Geometry (2023). DOI: <https://doi.org/10.1007/s10455-023-09909-w>
- Research Article* G. HOEPFNER, M. R. JAHNKE, and V. NOVELLI. *Normalization, optimal regularity, and solvability in Gevrey classes of vector fields near trapped orbits*. Proceedings of the American Mathematical Society (2023). DOI: <https://doi.org/10.1090/proc/16202>
- Research Article* M. R. JAHNKE. *Elliptic involutive structures on compact Lie groups*. Annali della Scuola Normale Superiore di Pisa. Classe di Scienze. Serie V (2023). DOI: https://doi.org/10.2422/2036-2145.202105_066
- Research Article* P. D. CORDARO and M. R. JAHNKE. *Top-degree global solvability in CR and locally integrable hypocomplex structures*. The Journal of Geometric Analysis (2021). DOI: [10.1007/s12220-020-00573-1](https://doi.org/10.1007/s12220-020-00573-1)
- Research Article* N. BRAUN RODRIGUES, G. CHINNI, P. D. CORDARO, and M. R. JAHNKE. *Lower order perturbation and global analytic vectors for a class of globally analytic hypoelliptic operators*. (2016) Proceedings of the American Mathematical Society, 144(12), 5159-5170. DOI: [10.1090/proc/13178](https://doi.org/10.1090/proc/13178).

DOCTORAL DISSERTATION AND MASTER'S THESIS

- Doctoral Dissertation* M. R. JAHNKE. (2018). *Top-degree solvability for hypocomplex structures and the cohomology of left-invariant involutive structures on compact Lie groups*. (Doctoral dissertation). University of São Paulo, São Paulo, Brazil. DOI: [10.11606/T.45.2019.tde-25032019-092801](https://doi.org/10.11606/T.45.2019.tde-25032019-092801).
- Master's Thesis* M. R. JAHNKE. (2013). *A equação de Euler e a análise assintótica de Gevrey*. (Master's Thesis). University of São Paulo, Brazil. DOI: [10.11606/D.45.2013.tde-07022014-205830](https://doi.org/10.11606/D.45.2013.tde-07022014-205830).

OTHER PUBLICATIONS

- Complete Work in Conference Proceedings* P. D. CORDARO and M. R. JAHNKE. (2012). *Expansão Assintótica em Classes de Gevrey*. Atas do VI Simpósio de Iniciação Científica e Pós-graduação do Instituto de Matemática e Estatística da Universidade de São Paulo, São Paulo, Brazil.
- Complete Work in Conference Proceedings* M. V. P. GARCIA, S. R. L. GARCIA and M. R. JAHNKE. (2008). *O teorema de Arzelà-Ascoli e aplicações à análise*. Atas do IV Simpósio de Iniciação Científica e Pós-Graduação do IME-USP, São Paulo, Brazil.
- Extended Abstract in Conference Proceedings* J. M. P. SOLER, A. H. RIBEIRO and M. R. JAHNKE. (2017). *A produção da cerveja produzindo conhecimento*. Anais do 3º Congresso de Graduação da Universidade de São Paulo, Pró-Reitoria de Graduação – PRG.

GRANTS AND SCHOLARSHIPS

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|-------------|---------------------|--|-----------------|
| | Oct 2024 – Sep 2026 | DFG-Funded Research Position | 221,796 € |
| DFG-TPPI | | Funding from Deutsche Forschungsgemeinschaft to support own research position in Germany | |
| | Oct 2022 – Sep 2024 | DFG-Funded Research Position | 200,200 € |
| DFG-WBP | | Funding from Deutsche Forschungsgemeinschaft to support own research position in Germany | |
| | Jun 2019 – Sep 2022 | Postdoctoral Research Fellowship | 23,460 € / Year |
| FAS-FAPESP | | Fellowship in Brazil from São Paulo Research Foundation. | |
| | Jan 2020 – Jan 2021 | Postdoctoral Research Fellowship | |
| BEPE-FAPESP | | Fellowship from São Paulo Research Foundation to visit Rutgers University. | |
| | Jan 2019– May 2019 | Postdoctoral Research Fellowship | 61,783 € |

PNPD-CAPES	Fellowship from Coordination for the Improvement of Higher Education Personnel.
PDSE-CAPES	Sep 2017–Dec 2017 Research Internship Abroad Scholarship Scholarship from Coordination for the Improvement of Higher Education Personnel.
CNPq	Feb 2014–Jan 2018 Ph.D. Graduate Scholarship Scholarship from National Council of Technological and Scientific Development.
CNPq	Aug 2011–Jul 2013 MSc. Graduate Scholarship Scholarship from National Council of Technological and Scientific Development.
CNPq	Aug 2009–Jul 2010 Undergraduate Research Scholarship Scholarship from National Council of Technological and Scientific Development.
PEP	Aug 2008–Jul 2009 Undergraduate Research Scholarship Scholarship from University of São Paulo (Programa Ensinar com Pesquisa).

MASTER AND PH.D. SUPERVISIONS

2026	Guido Drei - University of Bologna <i>Ongoing co-supervision of Ph.D. student with Prof. Dr. Alberto Parmeggiani (supervisor).</i>
2025	Jannes Iven - University of Cologne <i>MSc. Thesis: Banach-Algebra, Fréchet-Algebra und die Borel-Abbildung.</i>

TEACHING AND TEACHING ASSISTANT EXPERIENCE

2023–2026	Universität zu Köln 2025 - Selected Topics in the field of Partial Differential Equations.
2024	University of Bologna <i>Minicourse on solvability for PDEs arising in the context of involutive structures.</i>
2022–2023	Philipps-Universität Marburg 2023 - Volunteer Tutor in the course of Fourier Integral Operators. 2022 - 2023 - Organizer of the Learning Seminar on Integrable Systems.
2010–2018	University of São Paulo <i>TA in several mathematical courses in graduate and undergraduate levels</i> 2018 - Calculus I for Chemistry; 2016 - Calculus I for Architecture; 2015 - Calculus VI (Integral Calculus); 2015 - Calculus III; 2014 - Calculus VI (Integral Calculus); 2013 - Calculus III for Oceanography ; 2012 - Introduction to Analysis; 2011 - Numerical Methods for Differential Equations; 2010 - Foundations of Numerical Analysis;

ACADEMIC SERVICES

Organizing
Committee

MEMBER OF THE ORGANIZING COMMITTEE OF:

- 2024 - Conference on Linear PDE's celebrating José Ruidival do Santos Filho's career
- 2023 - 11th Workshop on Geometric Analysis of PDEs and Several Complex Variables;
- 2019 - 10th Workshop on Geometric Analysis of PDEs and Several Complex Variables;

Organizing and
Scientific
Committee

MEMBER OF THE ORGANIZING AND SCIENTIFIC COMMITTEE OF:

- 2014 - 1st conference of Graduate Students in Mathematics and Applied Mathematics of the Institute of Mathematics and Statistics of the University of São Paulo

Reviewer

REVIEWER FOR ACADEMIC PAPERS IN JOURNALS:

2025 - *Analysis and Mathematical Physics*;

2024 - *Analysis and Mathematical Physics*;

2021 - *The Journal of Geometric Analysis*;

2021 - *Advances in Operator Theory*;

OTHER INFORMATION

Languages

PORTUGUESE: Native; ENGLISH: Fluent; GERMAN: Beginner.