

# Manuel Rissel

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NYU-ECNU Institute of Mathematical Sciences  
New York University Shanghai  
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Shanghai, China

## Education

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- 2018 – 2022     **Ph.D. in Mathematics**  
Shanghai Jiao Tong University, China  
Thesis title: *On the controllability of several mathematical models for incompressible magnetohydrodynamic flows*  
Advisor: Prof. Dr. Ya-Guang Wang
- 2016 – 2018     **M.Sc. in Mathematics**  
Shanghai Jiao Tong University, China  
Dual-degree program with the University of Konstanz, Germany  
Advisor: Prof. Dr. Ya-Guang Wang
- 2015 – 2018     **M.Sc. in Mathematics**  
University of Konstanz, Germany  
Advisor: Prof. Dr. Robert Denk
- 2012 – 2015     **B.Sc. in Mathematics**  
University of Konstanz, Germany  
Advisor: Prof. Dr. Robert Denk

## Employment

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- 2022 – on        **Postdoctoral Instructor**  
New York University Shanghai, China
- 2014 – 2016     **Student assistant at the Department of Mathematics and Statistics**  
University of Konstanz, Germany
- 2012 – 2014     **Student assistant at the Communication, Information, Media Centre (KIM)**  
University of Konstanz, Germany
- 2010 – 2012     **Apprenticeship, IT & Network specialist**  
City administration Friedrichshafen, Germany

## Research areas

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My primary research interests lie at the interface of the analysis of partial differential equations and mathematical control theory. In particular, I am working on the controllability of magnetohydrodynamic flows, the Navier-Stokes equations, and related models from mathematical physics; in this context, I am currently investigating new possibilities to reduce the number of required controls. My long term goals are to study also stochastically forced dynamical systems, and to explore connections between deterministic controllability properties and ergodicity in the presence of noise.

## Publications

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- [1] M. Rissel and Y.-G. Wang, “Global exact controllability of ideal incompressible magnetohydrodynamic flows through a planar duct,” *ESAIM Control Optim. Calc. Var.*, vol. 27, pp. Paper No. 103, 24, 2021. [Online]. Available: <https://doi.org/10.1051/cocv/2021099>
- [2] M. Rissel and Y.-G. Wang, “Remarks on exponential stability for a coupled system of elasticity and thermoelasticity with second sound,” *J. Evol. Equ.*, vol. 21, no. 2, pp. 1573–1599, 2021. [Online]. Available: <https://doi.org/10.1007/s00028-020-00636-4>
- [3] M. Rissel and Y.-G. Wang, “Small-time global approximate controllability for incompressible mhd with coupled navier slip boundary conditions,” *J. Math. Pures Appl.*, vol. 190, p. 103601, 2024. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0021782424000990>

## Preprints

- 2024 V. Nersesyan, M. Rissel, “Global controllability of Boussinesq flows by using only a temperature control”, <https://doi.org/10.48550/arXiv.2404.09903>
- 2024 L. Mertz, V. Nersesyan, M. Rissel, “Exponential mixing of constrained random dynamical systems via controllability conditions”, <https://doi.org/10.48550/arXiv.2403.16058>
- 2023 M. Rissel, “Exact controllability of incompressible ideal magnetohydrodynamics in 2D”, <https://doi.org/10.48550/arXiv.2306.03712>
- 2022 V. Nersesyan, M. Rissel, “Localized and degenerate controls for the incompressible Navier–Stokes system”, <https://doi.org/10.48550/arXiv.2212.01221>

## Talks

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- 2023 Math Postdoc Seminar Series, NYU-ECNU Institute of Mathematical Sciences at NYU Shanghai, NYU Shanghai, November 22
- 2023 Analysis and PDE Seminar, Beijing International Center for Mathematical Research, Peking University School of Mathematical Sciences, November 13
- 2023 The 31st Yangtze River Conference on PDEs, Ningbo, November 12
- 2023 10th International Congress on Industrial and Applied Mathematics (ICIAM 2023), Tokyo, August 22
- 2023 Oberseminar Partielle Differentialgleichungen, University of Konstanz, Konstanz, June 15
- 2023 Applied Math PhD Seminar, Fudan University, Shanghai, April 13
- 2022 Northeast Normal University, Changchun, December 21, online
- 2020 Oberseminar Partielle Differentialgleichungen, University of Konstanz, December 10, online
- 2020 International Workshop on Applied Mathematics and Statistics, School of Mathematical Sciences, Shanghai Jiao Tong University and Department of Mathematics, University of Iowa, December 10, online

## Organization

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2023 August Co-organizer of the Minisymposium “*Interplay between controllability and qualitative aspects of stochastic dynamical systems*” at the 10th International Congress on Industrial and Applied Mathematics (ICIAM 2023) in Tokyo

## Teaching

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### Main Lectures

2024 Fall **Precalculus (MATH-SHU 9)**  
New York University Shanghai

2024 Summer **Calculus (MATH-SHU 131)**  
New York University Shanghai

2023 Summer **Calculus (MATH-SHU 131)**  
New York University Shanghai

### Recitation Lectures

2024 Summer **Calculus Recitations (MATH-SHU 131)**  
New York University Shanghai

2024 Spring **Functions of a Complex Variable Recitations (MATH-SHU 282 002)**  
New York University Shanghai

2024 Spring **Multivariable Calculus Recitations (MATH-SHU 151 003)**  
New York University Shanghai

2023 Fall **Functional Analysis Recitations (MATH-SHU 226 002)**  
New York University Shanghai

2023 Fall **Multivariable Calculus Recitations (MATH-SHU 151 003)**  
New York University Shanghai

2023 Summer **Calculus Recitations (MATH-SHU 131)**  
New York University Shanghai

2023 Spring **Multivariable Calculus Recitations (MATH-SHU 151 003 and 004)**  
New York University Shanghai

2023 Spring **Linear Algebra Recitations (MATH-SHU 140 004)**  
New York University Shanghai

2022 Fall **Multivariable Calculus Recitations (MATH-SHU 151 003)**  
New York University Shanghai

2016 Spring **Student TA, Stochastics I - Part A**  
Read by Dr. Markus Kunze at University of Konstanz

2015/2016 Fall **Student TA, Numerics of Partial Differential Equations**  
Read by Prof. Dr. Stefan Volkwein at University of Konstanz

2015 September	<b>Student TA, Mathematics Preparation Course</b> Read by Dr. Duc Khiem Huynh at University of Konstanz
2015 Spring	<b>Student TA, Analysis II</b> Read by Prof. Dr. Oliver Schnürer at University of Konstanz
2014/2015 Fall	<b>Student TA, Linear Algebra I</b> Read by Prof. Dr. Arno Fehm at University of Konstanz
2014 Spring	<b>Student TA, Linear Algebra II</b> Read by Prof. Dr. Salma Kuhlmann at University of Konstanz

## Academic Service

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### Committees

2015 – 2016	Elected student member of the faculty council, Department of Mathematics and Statistics, University of Konstanz
2015 – 2016	Member of the student council, Department of Mathematics and Statistics, University of Konstanz

### Reviewer

- Communications in Mathematical Sciences

## Awards & Honors

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2023	Best oral presentation award at the 10th Anniversary NYU Shanghai Postdoctoral and Doctoral Research Assembly
2022 – on	Postdoctoral fellowship at New York University Shanghai
2018 – 2022	Chinese Government Scholarships by China Scholarship Council (CSC)
2021	上海市现代分析前沿科学研究基地博士生“吴文俊奖学金”特别奖 Wu Wen-Tsun Scholarship for Outstanding Doctoral Students
2016 – 2018	Shanghai Jiao Tong University Scholarship