

# Willi Kepplinger

## Curriculum Vitæ

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## Education

- since January 2021 **Doctoral studies in Mathematics**, *University of Vienna*.  
advised by Vera Vértési and co-advised by Michael Eichmair
- 2019–2020 **Master of Science in mathematics**, *University of Vienna*.  
The thesis was on the relation between Kirby diagrams and trisection diagrams
- 2015–2019 **Bachelor of Science in Physics**, *University of Vienna*.  
Graduated with distinction in February 2019. The thesis was on the geometric Laplacian on compact Riemannian manifolds.
- 2014 **High school graduation**, *Realgymnasium Hollabrunn*.

## Further Education

### MCMP (Masterclass Mathematical Physics).

This interdisciplinary program is aimed at highly motivated students with an interest in both mathematics and physics, and it requires them to attend courses at both faculties. For further information, see <https://mcmp.univie.ac.at/>.

## Publications and Preprints

1. *Spectral geometry of the curl operator on smoothly bounded domains*, in preparation, complete draft available upon request, joint work with Josef Greilhuber
2. *Isolated steady solutions of the 3D Euler equations* [arxiv], joint work with Alberto Enciso and Daniel Peralta-Salas, in revision at Proc. Nat. Acad. Sci. U.S.A (PNAS)
3. *On Arnold's transversality conjecture for the Laplace-Beltrami operator* [arxiv], joint work with Josef Greilhuber
4. *On spectral simplicity of the Hodge Laplacian and curl operator along paths of metrics*, Trans. Amer. Math. Soc. 377 (2024), 7829-7845 [journal]
5. *An algorithm taking Kirby diagrams to trisection diagrams*, Pacific Journal of Mathematics, Vol. 318 (2022), No. 1, 109–126 [journal]

## Academic Visits

- April 2024 **ICMAT, Madrid, Spain**.  
Guest of Daniel Peralta-Salas
- August 2023 **Stanford University, USA**.  
Guest of Eugenia Malinnikova
- January 2023 **ICMAT, Madrid, Spain**.  
Guest of Daniel Peralta-Salas

December **Universität Regensburg, Regensburg, Germany.**  
2022 Guest of Bernd Ammann

April 2022 **Georgia Institute of Technology, Atlanta, USA.**  
Guest of John Etnyre

## Work/Teaching Experience

Winter **Seminar on Geometry and Topology.**  
semester For bureaucratic reasons I am only unofficially in charge of this ambitious course on foliation  
2024 theory and contact topology

Winter **Tutor for “Introduction to mathematical methodology”.**  
semesters This is a mandatory first semester course meant to acclimate students to university level  
2019, 2021, mathematics. In 2023, I was responsible for organizing this course for all first semester  
2023 students at the University of Vienna (around 180 in total)

Fall 2018 and **Tutor for “Mathematik macht Freude”.**  
2019 This is a bridging course to support incoming students in STEM degree programs at the  
University of Vienna, see <https://mmf.univie.ac.at/vorkurs/> for more details.

2014-2015 **Civil Service at Caritas.**  
During my mandatory civil service, I worked with people who have mental handicaps.

## Service

2022-present **Representation of doctoral students at the University of Vienna.**  
Member of the conference of studies, initiator/planer for projects such as a Buddy group  
program and an interdisciplinary diversity event. Furthermore, I have represented the student  
body of the University of Vienna in several hiring and habilitation commissions.

2017-2020 **Assisting the Student Council at the Faculty of Mathematics.**  
Tasks include being part of an appointment committee, helping to organize a stem cell  
registration initiative and other odd jobs such as helping bachelor students with their  
coursework or helping out with organizational matters.

Summers **Teaching German to refugees at “Haus Helina” in Horn, Lower Austria.**  
2015 and  
2016

## Languages

German **Native.**  
English **Fluent.**