

# Philipp Jell

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Born: 14.04.1990—Regensburg, Germany  
Nationality: German

## Current position

*Postdoc* at the Collaborative research centre “Higher Invariants”, Project “Tropical Approaches to Arakelov Geometry”, Universität Regensburg

## Grants, honors & awards

- 2017-2019 Research Fellowship by the Deutsche Forschungsgemeinschaft
- 2018 Scholarship by the Institute Mittag-Leffler
- 2017 Nomination for “Bayerischer Kulturpreis”
- 2012-2013 Cambridge Home and European Scholarship Scheme
- 2011-2013 Scholarship by the “Studienstiftung des deutschen Volkes”

## Publications & Preprints

### Publications

- 2019+ Differentiability of non-archimedean volumes and non-archimedean Monge-Ampère equations (with an appendix by Robert Lazarsfeld), with José Ignacio Burgos Gil, Walter Gubler, Klaus Künnemann, and Florent Martin, to appear in *Algebraic Geometry*, [arxiv:1608.01919](https://arxiv.org/abs/1608.01919)
- 2019+ Continuity of plurisubharmonic envelopes in non-archimedean geometry and test ideals (with an appendix by José Ignacio Burgos Gil and Martín Sombra), with Walter Gubler, Klaus Künnemann, and Florent Martin, to appear in *Annales de l'Institut Fourier*, [arxiv:1712.00980](https://arxiv.org/abs/1712.00980)
- 2019 Tropical Dolbeault cohomology of non-archimedean curves and harmonic tropicalizations, to appear in *Oberwolfach reports*, [available here](#).
- 2019 Tropical Hodge numbers of non-archimedean curves, *Israel Journal of Mathematics* 229(1), 287-305, 2019.
- 2019 Superforms, tropical cohomology and Poincaré duality, with Kristin Shaw and Jascha Smacka, *Advances in Geometry*, 19(1):101-130, 2019.

- 2018 Lefschetz (1,1)-theorem in tropical geometry, with Johannes Rau and Kristin Shaw, *Épjournal de Géométrie Algébrique 2*: Art. 11, 2018.
- 2018 Poincaré duality for the tropical Dolbeault cohomology of non-archimedean Mumford curves, with Veronika Wanner, *J. Number Theory* 187, 344–371, 2018.
- 2016 Real-valued differential forms on Berkovich analytic spaces and their cohomology, *PhD Thesis*, [available here](#).
- 2016 A Poincaré Lemma for real-valued differential forms on Berkovich spaces, *Mathematische Zeitschrift* 282(3-4): 1149-1167, 2016.

## Preprints

- 2018 Real tropicalization and analytification of semialgebraic sets, with Claus Scheiderer and Josephine Yu, [arxiv:1810.05132](#)
- 2018 Constructing smooth and fully faithful tropicalizations for Mumford curves, [arxiv:1805.11594](#)

## Conference Organisation

- 2019 NATROP 2019: Conference for young researchers in non-archimedean and tropical geometry, July 29th to August 2nd. (joint with Helene Sigloch, Martino Stoffel and Veronika Wanner)
- 2019 Gattaca (Georgia Tech Tropical Arithmetic and Combinatorial Algebraic-geometry), March 30th and 31st (joint with Matt Baker, Yoav Len and Padma Srinivasan)
- 2017 Students' conference on Non-archimedean and Tropical Geometry, at University of Regensburg, July 31st to August 4th 2017 (joint with Helene Sigloch and Veronika Wanner)

## Invited Talks

- 2019 Workshop on Applied Algebra, TU Braunschweig, Germany
- 2019 Workshop TGiF, Universität Frankfurt, Germany
- 2019 Oberwolfach Workshop “Non-archimedean geometry and applications” at the MFO, Oberwolfach, Germany
- 2019 Algebra seminar at University of Iowa, Iowa City, IA
- 2018 Number Theory seminar at Emory University, Atlanta, GA
- 2018 Algebraic Geometry seminar at University of Oslo, Oslo, Norway
- 2018 Conference “Tropical varieties and amoebas in higher dimensions” at the KTH Royal Institute of Technology, in Stockholm, Sweden
- 2018 Workshop “Moduli spaces of curves and mirror symmetry” at the Institute Mittag-Leffler, in Stockholm, Sweden
- 2018 Conference “Tropical geometry meets representation theory” at University of Cologne, Cologne, Germany
- 2017 Algebraic geometry seminar Binghamton University in Binghamton, NY
- 2017 Combinatorics seminar at TU Berlin, Berlin, Germany

- 2016 Conference “Arakelov Geometry – Archimedean and Non-Archimedean Aspects”, in Regensburg, Germany
- 2016 Conference GCMNT at “Al. I. Cuza” University, Iasi, Romania
- 2015 STAGS 2015 at Brown University in Providence, MA

## Education

- 2013-2016 Universität Regensburg, PhD in Mathematics with advisors Prof. Dr. Klaus Künnemann and Prof. Dr. Walter Gubler, Final grade: Summa Cum Laude
- 2012-2013 University of Cambridge, Master of Advanced Studies: Mathematics, Part III, Final grade: Distinction
- 2009-2012 Universität Regensburg, Bachelor of Science: Mathematics
- 2009 Abitur (final secondary exam)

## Employment

- 2019 Visiting assistant professors, Georgia Institute of Technology
- 2017-2019 Visiting Scholar funded by the Deutsche Forschungsgemeinschaft, Georgia Institute of Technology
- 2018 Postdoc at the Institute Mittag-Leffler
- 2016-2017 Postdoc Position at the DFG-Collaborative research centre “Higher Invariants”, Universität Regensburg
- 2015-2016 PhD Position at the DFG-Collaborative research centre “Higher Invariants”, Universität Regensburg
- 2013-2015 PhD Position at the Universität Regensburg, with Prof. Dr. Klaus Künnemann

## Teaching

- 2019 Lecture “Introduction to Linear Algebra”
- 2017 Organisation of Working Group seminar “Equidistribution of Weierstrass points” (joint with Dr. Florent Martin)
- 2016-2017 Organisation of Working Group seminar “Uniform Mordell Conjecture” (joint with Dr. Florent Martin)
- 2016 Co-supervision of master’s thesis “Harmonic functions on the Berkovich projective line” with Prof. Dr. Walter Gubler
- 2015 Teaching assistant for the course “Linear Algebra II” by Prof. Dr. Klaus Künnemann
- 2014-2015 Teaching assistant for the course “Linear Algebra I” by Prof. Dr. Klaus Künnemann
- 2014-2015 Algebra course for students of high school teaching (joint with Philipp Graf)
- 2014 Seminar “From Fermat to Minkowski” (joint with Prof. Dr. Klaus Künnemann)
- 2013-2014 Teaching assistant for the course “Algebra” by Prof. Dr. Guido Kings

Last updated: June 19, 2019