

# Ingrid Imer

## Curriculum Vitae

### Contact Information

Department of Mathematics  
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### Education

Ph.D. in Mathematics (Magna cum laude), Universität Bonn 2010  
Thesis title: *The Curve Graph and Surface Construction in  $S \times \mathbb{R}$*   
Thesis advisor: Professor Ursula Hamenstädt  
Honours(1st class) in Physics, Australian National University 2003  
Honours Thesis title: Unusual Properties - Mathematical and Physical - of the  $a$ -boundary Construction  
Honours Thesis advisor: Dr. Susan Scott  
B.S. in Physics, Australian National University 2001

### Research Interests

Low dimensional geometry/topology, mapping class groups, Lorentzian geometry.

### Employment

Technion, Haifa, Israel 9/2017-6/2018  
University of Melbourne 10/2016-6/2017  
Tübitak foreign research fellowship, METU, Ankara 7/2015-7/2016  
Resident Tutor, St. Mary's College, University of Melbourne 12/2014-6/2015  
Florida State University, Florida 8/2014-12/2014  
JSPS Fellow, University of Tokyo 6/2014-8/2014  
Post-doctoral position, National University of Singapore 9/2012-7/2014  
ICERM Postdoc, Brown University 9/2013-12/2013  
"Wissenschaftliche Mitarbeiterin" Institut für Informatik II (computer graphics),  
Universität Bonn 1/2011-6/2012

### Scholarly visiting positions

ICTP, Trieste, Italy 11/2017  
Max Planck Institut, Bonn, Germany 8/2017

### Professional Awards and Honors

University medal (Theoretical Physics), Australian National University 2003  
Crawford Science Prize, Australian National University 2003  
Bonn International Physics Program, Scholarship from Deutscher Akademischer  
Austausch Dienst 2001

## Personal Data

Date of Birth: 04/15/1981  
Place of Birth: Brisbane, Australia  
Nationality: Australian and German  
Languages: English and German  
Marital status: Single

## Publications

1. *Geometry of the homology curve complex*, Journal of Topology and Analysis **4** 3 (2012) 335–359.
2. *The Chillingworth class is a signed stable length*, Algebraic and Geometric Topology **15** 3 (2015) 1863–1876.
3. *Stable lengths on the pants graph are rational*, New York Journal of Mathematics, **21** (2015) 1153–1168.
4. *Critical levels and Jacobi fields in a complex of cycles*, Osaka Journal of Mathematics, **54** 3 (2017) 475–497.
5. *Lifts of simple curves in finite regular coverings of closed surfaces*, Geometriae Dedicata **194** (2018) *in press*.

## Preprints

1. *A curve complex and incompressible surfaces in  $S \times \mathbb{R}$* , preprint 2011  
arXiv:1108.4206.
2. *Mesh editing in nonlinear constrained shape spaces*, (with O. Burghard, M. Hermann and R. Klein), preprint 2012.
3. *Fibering rigidity of 3-manifolds with Torelli monodromy*, preprint 2015  
arXiv:1502.03912.
4. *Immersed stable commutator length on surfaces is computable*, preprint 2017.
5. *Examples of covering properties of boundary points of space-times*, preprint 2017  
arXiv:1711.04167.
6. *Finding simple curves in surface covers is undecidable*, preprint 2018.

## Web-published materials

PhD thesis, available at <http://hss.ulb.uni-bonn.de/2011/2397/2397.htm>  
(with P. Przytycki and S. Tapie), Translation of parts IV-VI of “Bouts des Variétés Hyperboliques de Dimension 3” by Francis Bonahon. Available at <http://www.mimuw.edu.pl/~pprzytyc/ends.pdf>.  
Honours Thesis, available at [https://openresearch-repository.anu.edu.au/bitstream/1885/41344/4/Irmer\\_thesis\\_2.pdf](https://openresearch-repository.anu.edu.au/bitstream/1885/41344/4/Irmer_thesis_2.pdf)

## Invited Conferences, Talks, Colloquia and Seminar Lectures

Classical and Quantum 3-Manifold Topology, Monash, Australia	12/2018
Banff, Canada	3/2018
Geometry-Topology seminar, Georgia Tech, USA	3/2018
Geometry-Topology seminar, NUS, Singapore	3/2018

Geometry-Topology seminar, Technion, Israel	2/2018
Geometry-Topology seminar, Technion, Israel	11/2017
Geometry-Topology seminar, Georgia Tech, USA	8/2017
CATS conference, Sydney, Australia	6/2017
Geometry-Topology seminar, Monash University, Australia	4/2017
Topology Seminar, Notre Dame, USA	9/2016
Topology Seminar, METU, Turkey	4/2016
Geometry/Topology Working Day I, Hacettepe, Turkey	3/2016
Colloquium seminar, Koc University, Turkey	11/2015
General Seminar, Mimar Sinan, Turkey	11/2015
General Seminar, Hacettepe, Turkey	11/2015
Seminar, Bilkent University, Turkey	10/2015
Topology Seminar, METU, Turkey	8/2015
Algebra and Topology Seminar, ANU, Australia	5/2015
Pure Maths Seminar, University of Melbourne, Australia	1/2015
UNAM Topology Seminar, UNAM Mexico City, Mexico	11/2014
UNAM Topology Seminar, Cuernavaca, Mexico	11/2014
Topology Seminar, Florida State University, USA	11/2014
Topology Seminar, Hiroshima University, Japan	8/2014
Seminar, Nara Women's University, Japan	8/2014
Topology Seminar, University of Tokyo, Japan	7/2014
Topology Seminar, Osaka University, Japan	7/2014
Topology and Geometry Seminar, NUS, Singapore	9/2013
Geometric Topology Seminar, Columbia, USA	12/2013
Seminar, ICERM, USA	12/2013
Topology and Geometry Seminar, NUS, Singapore	10/2012
Seminar, Caen, France	3/2012
Geometric Topology Seminar, Pisa, Italy	3/2012
Geometry Topology Seminar, Rice, USA	6/2011
Geometry Topology Seminar, GaTech, USA	5/2011
Group Theory Seminar, Urbana-Champaign, USA	4/2011
Geometric Topology Seminar, Columbia, USA	3/2011
Geometry and Topology Seminar, CUNY, USA	3/2011
Geometric Group Theory Seminar, Münster, Germany	11/2011
Computer Graphics Seminar, Universität Bonn, Germany	1/2011
Geometry and Topology Seminar, University of Oklahoma, USA	12/2010
Geometry topology conference, UPenn, USA	9/2010
Oberwolfach, Germany, 6/2008	

## Graduate student supervision

Hatice Ünlü, METU University, Ankara, Turkey 2016-current

## Teaching experience

University of Melbourne: Calculus I tutorials and workshops, Vector Calculus tutorials 2017  
University of Melbourne: Calculus Tutorials 2015  
University of Melbourne, St. Mary's College: Physics 2015  
Florida State University, Topology tutorial, Florida State University 2014  
Universität Bonn: Lecturing applied mathematics courses for computer science students 2011-12  
Universität Bonn: Supervising undergraduate projects "Projektgruppe" and Bachelor Projects. Teaching materials are available on  
<http://www.cg.cs.uni-bonn.de/en/start/> 2011-12  
Universität Bonn: Supervising numerics tutorials for computer scientists 2011  
Universität Bonn: supervising tutorials and transcribing oral exams for pure mathematicians before 2011