

**Research Interests**

Low dimensional geometry and topology, hyperbolic geometry, Teichmüller and moduli spaces, random surfaces, random 3-manifolds.

**Employment**

Jan 2017 - : Post-doc, University of Bonn  
 Aug 2015 - Dec 2016: Post-doctoral fellow, Max Planck Institute for Mathematics, Bonn  
 Feb 2012 - Jun 2015: Assistant, University of Fribourg  
 Mar 2008 - May 2011: Analyst, Mercer, Arnhem  
 Jan 2007 - Dec 2007: Student assistant, Radboud University, Nijmegen  
 Nov 2005 - Jun 2007: Tutor Mathematics and Physics, Huiswerkinstituut Lindenholt, Nijmegen

**Education**

Jun 2011 - Jun 2015: Doctoral studies in Mathematics, University of Fribourg  
 Advisor: Hugo Parlier  
 Sep 2008 - Mar 2011: MSc. Mathematics *cum laude*, Radboud University Nijmegen  
 Sep 2005 - Sep 2009: BSc. Physics and Astronomy, Radboud University Nijmegen  
 Minor: Mathematics  
 Sep 1999 - Jul 2005: Atheneum, SG Lelystad

**Longer research visits**

Mar 2017: IHP, Paris  
 Funded by: Université Pierre et Marie Curie.  
 Nov 2014 - May 2015: Brown University, Providence, USA  
 Funded by: Mobility in project grant, Swiss National Science Foundation.  
 Mar 2013: Erwin Schrödinger Institute for Mathematics and Physics, Vienna  
 Funded by: CSWM Continued education grant.

**Grants**

Swiss NSF Mobility in project grant PP00P2.128557, Nov 2014 - May 2015  
 Amount: CHF 11160,-  
 CSWM Continued education grant, Mar 2013  
 Amount: CHF 750,-

**Organization**

Geometric Group Theory in Bonn II, 03 - 04 Dec, 2015.

**Conference talks**

16 Jul 2018 Geometric and Asymptotic Group Theory with Applications, Seoul  
 11 May 2017 Geometric Topology Fair 2017, KAIST, Daejeon  
 16 Mar 2017 Workshop on Enumerative Geometry, IHP, Paris  
 19 Mar 2016 Special Session on Invariants of Closed Curves on Surfaces,  
 AMS Spring Eastern Sectional Meeting, Stony Brook University  
 01 Jun 2015 Journée de géométrie, Université Paris-Est - Créteil  
 31 May 2014 GEAR Junior Retreat, University of Michigan at Ann Arbor

## Seminar talks

15 Nov 2017	University of Regensburg
24 Apr 2017	Ergodic Theory Seminar, Université de Rennes
23 Nov 2016	EPF Lausanne
16 Jun 2016	Hebrew University of Jerusalem
13 Jun 2016	Statistics & Topology Seminar, Technion, Haifa
03 May 2016	Universität Heidelberg
20 Apr 2016	Topology Seminar, UC Berkeley
19 Apr 2016	Topology Seminar, Stanford University
31 Mar 2016	MPI-Oberseminar, MPIM, Bonn
15 Mar 2016	Séminaire de Géométrie et Topologie, University of Toulouse
07 Dec 2015	MPIM Topology Seminar, MPIM, Bonn
19 Nov 2015	Geometry and Topology Seminar, University of Warwick
16 Nov 2015	GT3, Université de Strasbourg
11 Nov 2015	Universität Bielefeld
10 Nov 2015	Geometric Analysis & Differential Geometry Short talks, MPIM, Bonn
02 Nov 2015	Universität Bochum
04 Jun 2015	Discrete Geometry Seminar, Freie Universität Berlin
15 May 2015	Complex Analysis and Dynamics Seminar, Graduate Center, CUNY
12 May 2015	Stony Brook University
25 Mar 2015	Special Year in Hyperbolic Geometry, Hunter College, CUNY
29 Jan 2015	Boston College Geometry/Topology seminar, Boston College
20 Jan 2015	Geometric Group Theory and Topology Seminar, Tufts University
25 Nov 2014	Discrete math and geometry seminar, Brown University
09 Oct 2014	Combinatorics seminar, University of Fribourg

## Teaching experience

University of Bonn (Germany):

*Quantum unique ergodicity.*

Seminar, autumn 2017.

Audience: MSc and PhD students in Mathematics,  $\sim 10$  students.

Responsibilities: Examiner, help students prepare talks and grade them.

*Property (T).*

Seminar, autumn 2017.

Audience: MSc students in Mathematics,  $\sim 10$  students.

Responsibilities: Examiner, help students prepare talks and grade them.

*Random methods in geometry.*

Lecture course, spring 2017.

Audience: MSc students in Mathematics,  $\sim 10$  students.

Responsibilities: Lecturer, designed the course, wrote lecture notes (available on my homepage) and gave the lectures.

University of Fribourg (Switzerland):

*Analysis III and IV.*

Lecture course, autumn 2013, spring 2014.

Audience: BSc students in Mathematics and Physics,  $\sim 10$  students.

Responsibilities: Teaching assistant, helped the students with weekly exercises and graded these.

*Mathematical methods for computer scientists.*

Lecture course, spring 2012, autumn 2012, spring 2013.

Audience: BSc students in Mathematics and Computer Science,  $\sim 15$  students.

Responsibilities: Teaching assistant, helped the students with weekly exercises and graded these.

Radboud University Nijmegen (The Netherlands):

*Probability theory.*

Lecture course, autumn 2007.

Audience: BSc students in Mathematics and Physics, ~ 15 students.

Responsibilities: Teaching assistant, helped the students with weekly exercises and graded these.

*Calculus 1 and 2.*

Lecture course, autumn 2007.

Audience: BSc students in Mathematics and Physics, ~ 15 students.

Responsibilities: Teaching assistant, helped the students with weekly exercises and graded these.

*Electricity and Magnetism 1A.*

Lecture course, spring 2007.

Audience: BSc students in Chemistry and Molecular Life Sciences, ~ 15 students.

Responsibilities: Teaching assistant, helped the students with weekly exercises and graded these.

### **Student supervision**

Muhammad Ardiyansyah, Master's thesis (academic year 2017/2018)

### **Languages**

Dutch: Native speaker

English: Fluent

French: Good

German: Basic

### **Address**

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Email: [bpetri@math.uni-bonn.de](mailto:bpetri@math.uni-bonn.de)

Homepage: <http://www.math.uni-bonn.de/people/bpetri/>

## Accepted papers

- B. Petri. *Hyperbolic surfaces with long systoles that form a pants decomposition*.  
Proc. Amer. Math. Soc., to appear, 2017+  
Available at ArXiv e-prints (1609.00632).
- H. Baik, D. Bauer, I. Gekhtman, U. Hamenstädt, S. Hensel, T. Kastenholz, B. Petri  
& D. Valenzuela. *Exponential Torsion Growth for Random 3-Manifolds*.  
Int. Math. Res. Notices. IMRN, to appear, 2017+  
Available at ArXiv e-prints (1607.00631).
- B. Petri. & C. Thäle. *Poisson approximation of the length spectrum of random surfaces*.  
Indiana Univ. Math. J., to appear, 2017+  
Available at ArXiv e-prints (1605.00415).
- P. Cahn, F. Fanoni & B. Petri. *Mapping class group orbits of curves with self-intersections*.  
Israel J. Math., to appear, 2017+  
Available at ArXiv e-prints (1603.00846).
- B. Petri & A. Walker. *Graphs of large girth and surfaces of large systole*.  
Math. Res. Lett., to appear. 2017+.  
Available at ArXiv e-prints (1512.06839).
- H. Parlier & B. Petri. *The genus of curve, pants and flip graphs*.  
Discrete Comput. Geom., to appear, 2017+  
Available at ArXiv e-prints (1410.7910).
- B. Petri. *Finite length spectra of random surfaces and their dependence on genus*.  
J. Topol. Anal., 9 (4): 649 - 688, 2017
- B. Petri. *Random regular graphs and the systole of a random surface*.  
J. Topol., 10 (1): 211 - 267, 2017.

## Preprints

- M. Mirzakhani & B. Petri. *Lengths of closed geodesics on random surfaces of large genus*.  
Preprint, ArXiv e-prints (1710.09727), Oct 2017.
- B. Petri. *Counting non-commensurable hyperbolic manifolds and a bound on homological torsion*.  
Preprint, ArXiv e-prints (1709.01873), Sep 2017.