# CURRICULUM VITAE FOR LASSE REMPE-GILLEN

**Personal details.**


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| **Born:** | January 20, 1978, in Kiel, Germany |
| **Current address:** | Department of Mathematical Sciences, University of Liverpool, L69 7ZL, United Kingdom |
| **E-mail:** | l.rempe@liverpool.ac.uk |
| **ORCiD:** | 0000-0001-8032-8580 |


**Employment record.**

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| **08/2012 – present** | Professor of Pure Mathematics, University of Liverpool. |
| **06/2009 – 07/2012** | Reader (Associate Professor) in Pure Mathematics, University of Liverpool. |
| **01/2006 – 06/2009** | Lecturer (Assistant Professor) in Pure Mathematics, University of Liverpool. |
| **02/2004 – 12/2005** | Postdoctoral Fellow, DAAD (German Academic Exchange Council); University of Warwick. |
| **10/2003 – 01/2004** | Research Scholar, German-Israeli Foundation for Scientific Research and Development (G.I.F.); University of Kiel, Germany. |

**Research Grants awarded.**

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| **09/2007 – 09/2012** | EPSRC Advanced Research Fellowship EP/E052851/1, £429 981, *A question of Eremenko and other problems in transcendental dynamics.* |
| **10/2006 – 10/2009** | EPSRC first grant EP/E017886/1, £133 763, *Dynamics of finite-type entire functions*. |
| **03/2006** | Research Development Fund grant (University of Liverpool), £2600, *Dynamics of bounded-type entire functions*. |

**Selected awards and honours.**

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| **June 2013** | 2013 CMFT Young Researcher Award. |
| **October 2012** | Philip Leverhulme Prize (Leverhulme Foundation, £75 000). |
| **July 2010** | Whitehead Prize (London Mathematical Society). |
| **May 2004** | Fakultätspreis der Mathematisch-Naturwissenschaftlichen Fakultät der Universität Kiel (award for the best dissertation in mathematics and natural sciences at the University of Kiel in 2003). |
| **1999 – 2000** | Fulbright Scholar. |
| **November 1998** | Acceptance into the German National Merit Foundation. |

**Higher education.**

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| **2000 – 2003** | Doctoral degree (summa cum laude) in mathematics at the University of Kiel, Germany. Dissertation: *Dynamics of Exponential Maps*. |
| **2001 – 2002** | Participation in the DEA Algorithmique at the Université Paris-Sud in Orsay, France. Mémoire de DEA: *A Limit Problem for Online Scheduling*. |
| **1999 – 2000** | Fulbright Fellowship at Stony Brook University, USA. Master of Arts degree in mathematics awarded May 2000. |
| **1996 – 1999** | Student of mathematics and computer science at the University of Kiel. |

**Teaching and supervision experience.**

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| **01/2014 – present** | Supervision of post-doctoral research associate, Dr A. Dezotti. |
| **01/2006 – present** | Supervision of doctoral students: H. Mihaljević-Brandt (2006–2009), N. Alhabib (2011–present), S. Worsley (2014–present), M. Alhamd (2014–present). |
| **01/2006 – present** | University of Liverpool: Supervision of final-year undergraduate projects; delivery of undergraduate and graduate lectures; first-year tutorials. |
| **2004/2005** | Lecturing and tutorials at the University of Warwick. |

**Administrative experience.**

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| **Management** | Deputy Head of Department responsible for preparations for the REF ("Research Excellence Framework", a national research assessment exercise in the UK); member of Department Management Committee (2011–present). |
| **Research leadership** | Research cluster coordinator for Pure Mathematics (2012–present) and Dynamical Systems (2011–present) |
| **Institutional governance** | Member of the Liverpool University Research Strategy Group (2009–2013)<br>Member of the University of Liverpool Senate (since 2006) |
| **National governance** | Member of the Engineering and Physical Sciences Research Council (EPSRC) Strategic Advisory Team for Mathematical Sciences (since 2014). |

**Selected outreach and popularization activities.**

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| **02/2015-11/2015** | Secured Leverhulme *Artist in Residence* Grant (£15 000) to host award-winning composer Dr Emily Howard at the Department of Mathematical Sciences. |
| **07/2014** | Exhibition at the *IMA@50 Festival of Mathematics*, Manchester.<br>(See also *http://plus.maths.org/content/maths-metronomes-fireflies*.) |
| **01/2014** | "Primality testing for beginners" (with R. Waldecker) published by the AMS; this book explains the AKS primality test in a manner suitable for high-school students and first-year undergraduates. |
| **02/2009 – 04/2009** | Organised the exhibition "Chaos and fractals" at the Victoria Gallery, Liverpool. |
| **09/2008** | Event "Chaos and fractals – new frontiers" at the BA Festival of Science with an associated exhibition; also provided images and voice-over for the BBC audio slideshow "the art of mathematics" (http://news.bbc.co.uk/1/hi/sci/tech/7617191.stm). |
| **01/2008** | Lecture at *Association for Science Education* annual conference. |
| **2002 – 2006** | Organisation of several courses at the *Deutsche Schülerakademie*, a summer program for talented German high-school students. |

**Selected recent presentations.**

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| **09/2014** | Invited speaker, *LMS One-day function theory meeting*, London. |
| **07/2014** | Invited speaker, *Perspectives of Modern Complex Analysis*, Bedlewo. |
| **01/2014** | Invited speaker, *Dynamics on the interface of real and complex one-dimension*, Imperial College London. |
| **11/2013** | Mathematics colloquium, UC Berkeley. |
| **06/2013** | Invited speaker and prizewinner, *Conformal Methods in Function Theory*, Shantou (China). |
| **05/2013** | Invited speaker, *The role of complex analysis in complex dynamics*, ICMS Edinburgh. |
| **04/2013** | Invited morning speaker, *65th British Mathematical Colloquium*, Sheffield. |

**Other scholarship.**

- Member of the American, European and London Mathematical Societies.
- Member of the Editorial Board of *Computational Methods and Function Theory* (since 2014).
- Member of 2009 EPSRC Postdoctoral Fellowships sift and interview panels.

**Lasse Rempe-Gillen's publications (03/2015)**

PUBLISHED AND ACCEPTED RESEARCH ARTICLES

[J1] (with Sebastian van Strien) *Density of hyperbolicity for classes of real transcendental entire functions and circle maps*, Duke Math. J., to appear; arXiv:1005.4627.

[J2] (with Mariusz Urbański) *Non-autonomous conformal iterated functions systems and Moran-set constructions*, Trans. Amer. Math. Soc., to appear; arXiv:1210.7469.

[J3] (with Adam Epstein), *On the invariance of order for finite-type entire functions*, Ann. Acad. Sci. Fenn. Math., to appear; arXiv:1304.6576.

[J4] (with Zhaiming Shen), *The exponential map is chaotic: An invitation to transcendental dynamics*, conditionally accepted in *Amer. Math. Monthly*; arXiv:1408.1129.

[J5] *Hyperbolic entire functions with full hyperbolic dimension and approximation by Eremenko-Lyubich functions*, Proc. Lond. Math. Soc. **108** (2014), no. 5, 1193–1225; arXiv:1106.3439.

[J6] (with Helena Mihaljević-Brandt) *Absence of wandering domains for some real entire functions with bounded singular sets*, Math. Ann. **357** (2013), no. 4, 1577–1604; arXiv:1104.0034.

[J7] (with Phil Rippon) *Exotic Baker and wandering domains for Ahlfors islands maps*, J. Anal. Math. **117** (2012), 297–319; arxiv:1008.1724.

[J8] (with Volker Mayer) *Rigidity and absence of line fields for meromorphic and Ahlfors islands maps*, Ergodic Theory Dynam. Systems **32** (2012), no. 5, 1691–1710; arXiv:1012.4951.

[J9] (with Krzysztof Barański and Xavier Jarque) *Brushing the hairs of trancendental entire functions*, Topology Appl. **159** (2012), no. 8, 2102–2114; arXiv:1101.4209.

[J10] (with Günter Rottenfußer, Johannes Rückert and Dierk Schleicher) *Dynamic rays of bounded-type entire functions*, Dynamic rays of bounded-type entire functions. Ann. of Math. **173** (2011), no. 1, 77–125; arXiv:math.DS/0704.3213.

[J11] (with Sebastian van Strien) *Absence of line fields and Mañé's theorem for non-recurrent transcendental functions*, Trans. Amer. Math. Soc. **363** (2011), 203–228; arXiv:math.DS/0810.1658.

[J12] *Connected escaping sets of exponential maps*, Ann. Acad. Sci. Fenn. Math. **36** (2011), no. 1, 71–80; arXiv:0910.4680.

[J13] (with Jeremy Kahn and Mikhail Lyubich) *A note on hyperbolic leaves and wild laminations of rational functions*, J. Difference Equ. Appl., **16** (2010), no. 5–6, 655–665; arXiv:math.DS/0810.5571.

[J14] (with Phil Rippon and Gwyneth Stallard) *Are Devaney hairs fast escaping?*, J. Difference Equ. Appl., **16** (2010), no. 5–6, 739–762; arXiv:math.DS/0904.1403.

[J15] (with Gwyneth Stallard) *Hausdorff dimension of escaping sets of transcendental entire functions*, Proc. Amer. Math. Soc. **138** (2010), 1657–1665; arXiv:math.DS/0904.3072.

[J16] *The escaping set of the exponential*, Ergodic Theory Dynam. Systems **30** (2010), 505–599; arXiv:math.DS/0812.1768.

[J17] *Rigidity of escaping dynamics for transcendental entire functions*, Acta Math. **203** (2009), no 2, 235 –267; arXiv:math.DS/0605058.

[J18] (with Dierk Schleicher) *Bifurcations in the space of exponential maps*, Invent. Math. **175** (2009), no. 1, pp. 103–135; arXiv:math.DS/0311480.

[J19] *Hyperbolic dimension and radial Julia sets of transcendental functions*, Proc. Amer. Math. Soc. **137** (2009), 1411-1420; arXiv:0712.4267.

[J20] *Siegel disks and periodic rays of entire functions*, J. Reine Angew. Math., **624** (2008), 81–102; arXiv:math.DS/0408041.

[J21] *Prime ends and local connectivity*, Bull. Lond. Math. Soc. 40 (2008), no. 5, 817–826; arXiv:math/0309022.

[J22] (with Dierk Schleicher) *Bifurcation loci of exponential maps and quadratic polynomials: local connectivity, triviality of fibers, and density of hyperbolicity*, in: Holomorphic Dynamics and Renormalization, in Honour of John Milnor's 75th birthday (M. Lyubich and M. Yampolsky, eds), Fields Institute Communications **53** (2008); arXiv:0805.1658.

[J23] (with Dierk Schleicher) *Combinatorics of bifurcations in exponential parameter space*, in: Transcendental Dynamics and Complex Analysis (ed. by P.J.Rippon), Cambridge University Press, 2008, 317–370; arXiv:math.DS/0408011.

[J24] (with Markus Förster and Dierk Schleicher), *Classification of escaping exponential maps*, Proc. Amer. Math. Soc. **136** (2008), 651-663; arXiv:math.DS/0311427.

[J25] *On a question of Eremenko concerning escaping sets of entire functions*, Bull. Lond. Math. Soc. **39** (2007), no. 4, 661–666; arXiv:math.DS/0610453.

[J26] *On nonlanding dynamic rays of exponential maps*, Ann. Acad. Sci. Fenn. Math. **32** (2007), no. 2, 353–369; arXiv:math.DS/0511588.

[J27] *Topological dynamics of exponential maps on their escaping sets*, Ergodic Theory Dynam. Systems **26**, no. 6, 1939–1975; arXiv:math.DS/0309107.

[J28] *A landing theorem for periodic rays of exponential maps*, Proc. Amer. Math. Soc. **134** (2006), no. 9, 2639–2648; arXiv:math.DS/0307371.

[J29] *On a question of Herman, Baker and Rippon concerning Siegel disks*, Bull. London Math. Soc. **36** (2004), no. 4, 516–518; arXiv:math.DS/0307174.

### Completed manuscripts

[M1] *Arc-like continua, Julia sets of entire functions, and Eremenko's Conjecture*, Draft Manuscript (2014), 62 pages; available from https://lrempegillen.wikispaces.com/.

[M2] (with Walter Bergweiler and Núria Fagella) *Hyperbolic entire functions with bounded Fatou components*, Preprint, 2014, submitted for publication; arXiv:1404.0925.

### Books

[B1] (with Rebecca Waldecker) *Primality testing for beginners*, AMS Student Mathematical Library Series, 2014.

[B2] (with Rebecca Waldecker) *Primzahltests für Anfänger*, Vieweg+Teubner, 2009 (second edition to appear in 2015).

### Theses

[T1] *Dynamics of exponential maps*, doctoral thesis, Christian-Albrechts-Universität Kiel, 2003, `http://e-diss.uni-kiel.de/diss_781/`.

[T2] *A Limit Problem for Online Scheduling*, Mémoire de DEA Algorithmique, Université de Paris-Sud, Orsay, 2002.