



## Curriculum Vitae

### Personal Data

Name	Neunhäuserer
First Name	Jörg
Citizenship	German
Place of birth	Wuppertal
Date of birth	April 26, 1969
Family status	Married
Academic degree	Dr. rer. Nat.



### Studies

Apr. 1990 - Mar. 1997	Mathematics and Philosophy <i>Free University of Berlin</i>
Feb. 1997	Diploma in mathematics
Apr. 1997 - Oct. 1999	Doctorate studies of mathematics supported by a grand of the University of Berlin <i>Free University of Berlin</i>
Nov. 1999	PhD in mathematics

### Employments

Oct. 1992 – Oct. 1995	Lecturer as a student <i>Free University Berlin</i>
Apr. 1997 - Oct. 1999	Researcher founded by a grand of the Universities of Berlin <i>Free University Berlin</i>
Jul. 1999 - Jul. 2000	Researcher in the program “Dynamics: Analysis, efficient Simulation and ergodic theory” of the German research community <i>Technical University Dresden</i>
Sep. 2000 - Aug. 2002	Researcher in the program "Zetafunction and locally symmetric spaces" of the German research community <i>University Clausthal-Zellerfeld</i>
Mar. 2004 – Jun. 2005	Application procedure Junior professorship <i>Hamburg/Koblenz/Greifswald/Konstanz/Leipzig</i>
Oct. 2004 – Feb. 2005.	Teacher for mathematics <i>High school Willhöden Hamburg</i>
Oct. 2005 – Feb. 2009	Lecturer for mathematics <i>University of Applied Science Berlin</i>
Mar. 2009 - June 2009	Researcher in the „CODY“ research network of the European Union (Marie Curie Fellow) <i>TEI Kozani, Greece</i>
Oct. 2009 –	Lecturer for mathematics <i>Clausthal-Zellerfeld and Berlin</i>

DR. JÖRG NEUNHÄUSERER

Reitstallweg 9, 38640 Goslar, Germany  
Tel.: 0176/21259963  
E-mail: neunchen@aol.com



## Contact for recommendation letters

**Prof. Dr. Jörg Schmeling**

Center for Mathematical Science  
Lund Institute of Technology / Lund University  
Box 118, SE-22100 LUND  
Sweden

[Jorg.Schmeling@math.lth.se](mailto:Jorg.Schmeling@math.lth.se)

*The Supervisor of my PhD.*

**Prof. Dr. Antonios Bisbas**

Institute for general Science  
TEI of West-Macedonia  
Kila 50100, Kozani  
Greece

[bisbas@kozani.teiko.gr](mailto:bisbas@kozani.teiko.gr)

*The Supervisor of my Marie Curie Fellowship.*

**Prof. Dr. Thomas Prellberg**

Queen Mary University of London  
Miles End Road  
London E1 / 4NS  
United Kingdom

[thomas.prellberg@qmul.ac.uk](mailto:thomas.prellberg@qmul.ac.uk)

*My colleague at TU Clausthal*

**Prof. Dr. Volker Reitmann**

Max-Planck-Institute for Physics of Complex Systems  
Nöthnitzer Str. 38  
D-01187 Dresden  
Germany

[reitmann@rcs.urz.tu-dresden.de](mailto:reitmann@rcs.urz.tu-dresden.de)

*The head of the research group of the DFG at TU Dresden*

**Prof. Dr. Karoly Simon**

Department of Stochastic  
Institute of Mathematics  
Technical University of Budapest  
1521 Budapest P.O.Box 91  
Hungary

[simonk@math.bme.hu](mailto:simonk@math.bme.hu)

*Wrote referees reports on my works.*



## QUALIFICATIONS

Experience in academic research and teaching (development of research projects, publication of articles, lecturing), strong didactic skills, strong IT skills, English fluent in written and spoken

## RESEARCH INTERESTS

- Dynamical systems (Symbolical Dynamics, Ergodic theory)
- Geometric Measure theory (Dimension theory, Self-similar measures)
- Stochastic (Random walks)
- Fractal Geometry

## PREPRINTS

1. Nonuniform Markov geometric measures, submitted 2011.
2. Dimension estimates for certain sets of infinite complex continued fractions, submitted 2011.
3. Hundred beautiful mathematical theorems with short proofs, Script.

## PUBLICATIONS

1. On the Hausdorff dimension of fractals given by certain expansions of real numbers, *Archiv der Mathematik*, vol. 97, no.5, 459-466, 2011
2. A family of exceptional parameters for non-uniform self-similar measures, *Electronic Communications in Probability*, vol. 16, 192-199, 2011.
3. On inhomogenous Bernoulli convolutions and random power series, *Real Analysis Exchange* vol.16, no. 1, 213-222, 2011. (with A. Bisbas)
4. Li-York pairs of full Hausdorff dimension for some chaotic dynamical systems, *Mathematica Bohemica* 135, no. 3, 279-289, 2010.
5. The weighted Moran formula for the dimension of generic McMullen-Bedford carpets, *Chaos, Solitons & Fractals*, vol 42, issue 2, 890-895, 2009.
6. A general result on absolute continuity of non-uniform self-similar measures on the real line, *Fractals*, vol. 16, no. 4, 299-304, 2008.
7. Random Walks on infinite self-similar graphs, *Electronic Journal of Probability*, vol. 12, no. 46, 1258-1275, 2007.
8. Dimension theory of linear Solenoids, *Fractals*, vol. 15, No.1, 63-72, 2007.
9. A construction of asymmetric overlapping self-similar measures, *Acta Mathematica Hungarica*, vol. 113 (4), 333-343, 2006.
10. Dimension theoretical properties of generalized Baker's transformations, *Nonlinearity* 15, 1299-1307, 2002.
11. Number theoretical peculiarities in the dimension theory of dynamical systems, *Israel Journal of Mathematics* 128, 267-283, 2002.
12. An isomorphism between polynomial eigenfunctions of the transfer operator and the Eichler cohomology for modular groups, *Mathematical Physics Electronic Journal*, vol. 7, 1-18, 2001. (with D. Mayer)
13. Properties of some overlapping self-similar and some self-affine measures, *Acta Mathematica Hungarica*, vol. 92 (1-2), 143-161, 2001.

## REPORTS

1. Dimensional theoretical properties of affine dynamical systems, DFG-Schwerpunktprogramm "Dynamik: Analysis, effiziente Simulation und Ergodentheorie", vol. 5, 1-10, 2000.
2. A new class of counterexamples to the variational principle for Hausdorff dimension, DFG-Schwerpunktprogramm "Dynamik: Analysis, effiziente Simulation und Ergodentheorie", vol. 25, 1-15 1998.



## THESIS

- Dimensional theoretical properties of some affine dynamical systems, PhD Thesis, Free University Berlin, 1999. [Referees reports: summa cum laude]
- Die Fat Baker's Transformation - Ein Gegenbeispiel zum Variationsprinzip der Hausdorff Dimension -, Diploma Thesis, Free University of Berlin, 1996. [Note: excellent]

## TALKS

- About Li-Yorke chaos from a dimensional theoretical perspective, Visegrad Conference, Slovakia, 2011.
- From number theory to dynamical systems via geometric measure theory, Queen Mary University of London, 2010
- Zufallswege auf unendlichen gewurzelten selbst-ähnlichen Graphen University Erlangen-Nürnberg, 2010.
- Results on self-similar measures on the real line, Conference „CODY Midterm“ Warwick 2009 / Conference „Fractals and Stochastics“, Greifswald 2008.
- Der T-Test, University Mainz, 2008.
- Random walks on infinite self-similar graphs, University Greifswald, 2008 / Conference „Ergodic theory and Dynamical systems“, Poland, 2006 / Conference „Dynamical Systems“ Czech, 2006.
- Einführung in die Dimensionstheorie Dynamischer Systeme, University Konstanz, 2003.
- Results on self-similar measure an applications, University Greifswald / University Koblenz, 2003
- Dimensions theory for Attractors of Solenoid-typ, University of Hamburg/ DMV Conference Halle, 2002.
- An result on overlapping self-similar measures and its applications, Seminar, Center for Mathematical Analysis, Geometry and Dynamical Systems, University Lisbon, 2002.
- Classical and Semiclassical trace formulae, Seminar mathematical Physics, University Clausthal, 2001.
- A Douady-Oesterle type estimate for the Hausdorff dimension of invariant sets of piecewise smooth maps, Conference on Differential Equations and Application, University St. Petersburg / Seminar dynamical systems, University Dresden, 2000.
- Erdős measures, Colloquium, University Clausthal, 2000.
- Dimension theory of affine Systems, Workshop on Dimensions of Attractors, University St. Petersburg, 1999 / Colloquium, University Clausthal, 2000.
- On the variational principle for Hausdorff dimension, Seminar dynamical systems, TU Dresden, 1999.
- Dimensional theoretical properties of some affine dynamical systems, Seminar dynamical Systems, University Dresden, 1999.
- Symbolic dynamics and its applications, Free University Berlin, 1999.
- On the variational principle for Hausdorff dimension, University Lisbon, 1998.
- Properties of some self-similar and self-affine measures, Workshop "Around one dimensional dynamics", Banach Center Warszawa, 1997.



## TEACHING

- Lecture “Probability theory and cryptography”, TFH Berlin, 2011/2012.
- Lecture “Linear Algebra”, TFH Berlin, 2011.
- Lecture “Probability theory and cryptography”, TFH Berlin, 2010/2011.
- Lecture “Mathematics for economist and chemist II”, TU Clausthal, 2010.
- Lecture “Mathematics for economist and chemist”, TU Clausthal, 2009/2010.
- Lecture “Probability theory and cryptography”, TFH Berlin, 2009/2010.
- Lecture “Analysis”, TFH Berlin, 2008/2009.
- Lecture “Probability theory and cryptography”, TFH Berlin, 2008/2009.
- Lecture “Mathematics for technicians“, TFH Berlin, 2008.
- Lecture “Mathematics for engineers”, TFH Berlin, 2007/2008.
- Lecture “Mathematics for computer scientists”, TFH Berlin, 2007.
- Lecture “Probability theory and cryptography”, TFH Berlin, 2006/2007.
- Lecture “Mathematics for computer scientists”, TFH Berlin, 2006.
- Lecture “Discrete Mathematics”, TFH Berlin, 2005/2006.
- Courses Mathematics and Physics, Gymnasium Wilhöden Hamburg, 2004/05.
- Lecture “Introduction to dynamical systems”, TU Clausthal, 2002.
- Lecture “Dimension theory”, TU Clausthal, 2001/2002.
- Lecture “Ergodic theory”, TU Dresden, 2000.
- Course “Statistic”, FU Berlin, 1995.
- Course “Linear Algebra I/II”, FU Berlin, 1993/94.
- Course “Analysis I-III”, FU Berlin 1992/93.

## IT SKILLS

- Cryptography (RSA / DES )
- Programming (PASCAL / C)
- Design of Web Pages (HTML)
- Computer Algebra Systems (MATHEMATICA)
- Mathematical Typeset (LATEX)
- Ray-Tracing (POVRAY)
- MS Office Software



**DER FACHBEREICH  
MATHEMATIK UND INFORMATIK  
DER  
FREIEN UNIVERSITÄT BERLIN**

verleiht

unter dem Präsidenten Professor Dr. med. Peter Gaetgens  
durch die Dekanin Professor Dr. rer. nat. Elfriede Fehr

Herrn

**JÖRG NEUNHÄUSERER**

geboren am 26. April 1969 in Wuppertal

den akademischen Grad

**DOKTOR DER NATURWISSENSCHAFTEN**

(Doktor rer. nat.)

nachdem er in einem ordentlichen Promotionsverfahren durch die von  
Priv.-Doz. Dr. rer. nat. Jörg Schmeling  
und Prof. Dr. Károly Simon  
begutachtete Dissertation

**„An analysis of dimensional theoretical properties  
of some affine dynamical systems“**

und durch die Disputation mit dem Vortragsthema

**„Symbolische Dynamik und ihre Anwendung“**

seine besondere wissenschaftliche Befähigung nachgewiesen hat  
und seine Promotionsleistungen im Gesamtergebnis mit dem  
Prädikat

**MAGNA CUM LAUDE**

bewertet worden sind.

Berlin, den 10. November 1999



.....  
Dekanin



FREIE UNIVERSITÄT BERLIN

FACHBEREICH MATHEMATIK

ZEUGNIS

ÜBER DIE DIPLOM-VORPRÜFUNG  
IM FACH MATHEMATIK

Herr Jörg Neunhäuserer

geboren am 26.4.1969 in Wuppertal

hat am Fachbereich Mathematik der Freien Universität Berlin die Diplom-Vorprüfung  
im Fach Mathematik am 5.3.1992 abgelegt und mit der Gesamtnote


"Sehr gut" bestanden.

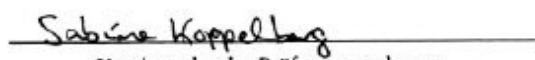
Die einzelnen mündlichen Teilprüfungen wurden mit folgenden Noten bewertet:

Analysis	Sehr gut	( 1,3)	Prüfer: Prof. Dr. M. Aigner
Lineare Algebra	Gut	( 2,0)	Prüfer: Prof. Dr. R.-H. Schulz
Numerische Mathematik	Sehr gut	( 1,3)	Prüfer: Prof. Dr. R. Gorenflo
Elementare Wahrscheinlichkeitstheorie	----	---	----
Philosophie (Nebenfach)	Sehr gut	( 1,0)	Prüfer: Prof. Dr. U. Wolf

Berlin-Dahlem, den 5. März 1992

Siegel

  
Prof. Dr. E. Behrends  
Fachbereichssprecher  
Dekan

  
Vorsitzender des Prüfungsausschusses  
Prof. Dr. S. Koppelberg

Die Diplom-Vorprüfung ist entsprechend den Bestimmungen der „Ordnung für die Diplomprüfung in Mathematik an der Freien Universität Berlin“ vom 14. 10. 1981 in der zur Zeit geltenden Fassung abgelegt worden. Noten gem. § 10 Absatz 1: Sehr gut — Gut — Befriedigend — Ausreichend — Nicht ausreichend; die jeweilige Einzelnote kann um 0.3 erhöht oder erniedrigt werden, wobei die