Curriculum Vitae, Jonathan Gross

Institute for Theoretical Physics
The University of Leipzig, PO box: 100 920, 04009 Leipzig, Germany

Phone: +49-341-97 32 443; E-Mail: gross@itp.uni-leipzig.de; WWW: www.jonathangross.de

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Education

July 2013, **PhD in Physics** The University of Georgia; Athens, GA, USA
Supervisor: Michael Bachmann, *Parallel Monte Carlo Simulations of Coarse-Grained Flexible Polymers to Obtain Structural Phase Diagrams*

March 2010, **Diplom in Physics** The University of Leipzig; Leipzig, Germany
Supervisor: Wolfhard Janke, *Multithreading Monte Carlo Simulationen eines minimalistischen Polymermodells*

Research Positions and Experience

August 2013 – present **The University of Leipzig**, Institute for Theoretical Physics
(Postdoc) Advisor: Wolfhard Janke

July 2011 – July 2013 **The University of Georgia**, Athens, GA, USA
(Graduate Research Assistent) Advisor: Michael Bachmann

March 2010 – June 2011 **Jülich Research Centre**, Germany
(Graduate Research Assistent) Advisor: Michael Bachmann

Teaching Experience

Summer semester 2017 **Instructor** The University of Leipzig,
Institute for Theoretical Physics

- **12-PHY-BIPCS** *Introduction to Computational Software*
  Responsibilities:
  - overall course design (syllabus and lectures)
  - teaching
  - design and grading of homework and exams
  - supervision of teaching assistents

Summer semester 2015 and 2016 **Instructor** The University of Leipzig,
Institute for Theoretical Physics

- **12-PHY-BIPCS** *Introduction to Computational Software*

Professional Skills

Language fluency German (native); English (full professional proficiency)

Programming languages C/C++, Python

High-performance computing Parallel programming with MPI, multithreading, GPU programming in OpenCL and CUDA

Peer Review

Referee for scientific journals

- Computer Physics Communications
- Europhysics Letters

Publications

10. J. Gross, J. Zierenberg, M. Weigel, and W. Janke,
Massively parallel multicanonical simulations on GPUs,
in preparation (2017).

9. M. Ivanov, J. Gross, and W. Janke,
Sing-chain behavior of poly(3-hexylthiophene),
Eur. Phys. J. Special Topics (2017).

8. J. Gross, M. Ivanov, and W. Janke,
Comparing atomistic and coarse–grained simulations of P3HT,
J. Phys.: Conf. Ser. **750**, 012009(1–5) (2015).

7. J. Gross, T. Vogel, and M. Bachmann,
Structural Phases of Adsorption for Flexible Polymers on Nanocylinder Surfaces,
Phys. Chem. Chem. Phys. **17**, 30702–30711 (2015).

6. T. Vogel, J. Gross, and M. Bachmann,
Thermodynamics of the Adsorption of Flexible Polymers on Nanowires,
J. Chem. Phys. **142**, 104901(1–8) (2015).

5. S. Foerster, E. Kohl, M. Ivanov, J. Gross, W. Widdra, and W. Janke,
Polymer adsorption on reconstructed Au(001): A statistical description of P3HT by scanning tunneling microscopy and coarse-grained Monte Carlo simulations,
J. Chem. Phys. **141**, 1647001(1–8) (2014).

4. J. Gross, T. Neuhaus, T. Vogel, and M. Bachmann,
Statistical Analysis of the Influence of Interaction Ranges on Structural Phases of Flexible

Polymers,
Phys. Proc. **53**, 50–54 (2014).

3. J. Gross, T. Neuhaus, T. Vogel, and M. Bachmann,
Effects of the interaction range on structural phases of flexible polymers,
J. Chem. Phys. **138**, 074905(1–8) (2013).

2. J. Gross, W. Janke, and M. Bachmann,
A GPU Approach to Parallel Replica-exchange Polymer Simulations,
Phys. Proc. **15**, 29–32 (2011).

1. J. Gross, W. Janke, and M. Bachmann,
Massively Parallelized Replica-exchange Simulations of Polymers on GPUs,
Comp. Phys. Commun. **182**, 1638–1644 (2011).

Oral presentations

15. *Studying polymers using coarse-grained models and generalized-ensemble computer simulations*, Coventry University Applied Mathematics Research Centre, Coventry, UK, 2017.

14. *Massively parallel multicanonical simulations on GPUs*, 17th International NTZ-Workshop on New Developments in Computational Physics (CompPhys16), Leipzig, Germany, 2016.

13. *Comparing atomistic and coarse-grained simulations of P3HT*, Spring Meeting of the German Physical Society, Regensburg, Germany, 2016.

12. *Comparing atomistic and coarse-grained simulations of P3HT*, 29th Annual CSP Workshop, The University of Georgia, Athens, GA, USA, 2016.

11. Polymers: random coils and beyond, 2nd iRTG workshop, Wittenberg 2015.

10. *Comparing atomistic and coarse-grained simulations of P3HT*, 16th International NTZ-Workshop on New Developments in Computational Physics (CompPhys15), Leipzig, Germany, 2015.

9. *Poly(3-hexylthiophene) adsorption on Au(001)*, 15th International NTZ-Workshop on New Developments in Computational Physics (CompPhys14), Leipzig, Germany, 2014.

8. *Monte Carlo study of polymer adsorption on nanocylinders*, Spring Meeting of the German Physical Society, Dresden, Germany, 2014.

7. *Adsorption of a coarse-grained flexible polymer on nanocylinders – A Monte Carlo study*, 14th International NTZ-Workshop on New Developments in Computational Physics (CompPhys13), Leipzig, Germany, 2013.

6. *Interaction range dependency of flexible polymer structural phases*, 26th Annual CSP Workshop, The University of Georgia, Athens, GA, USA, 2013.

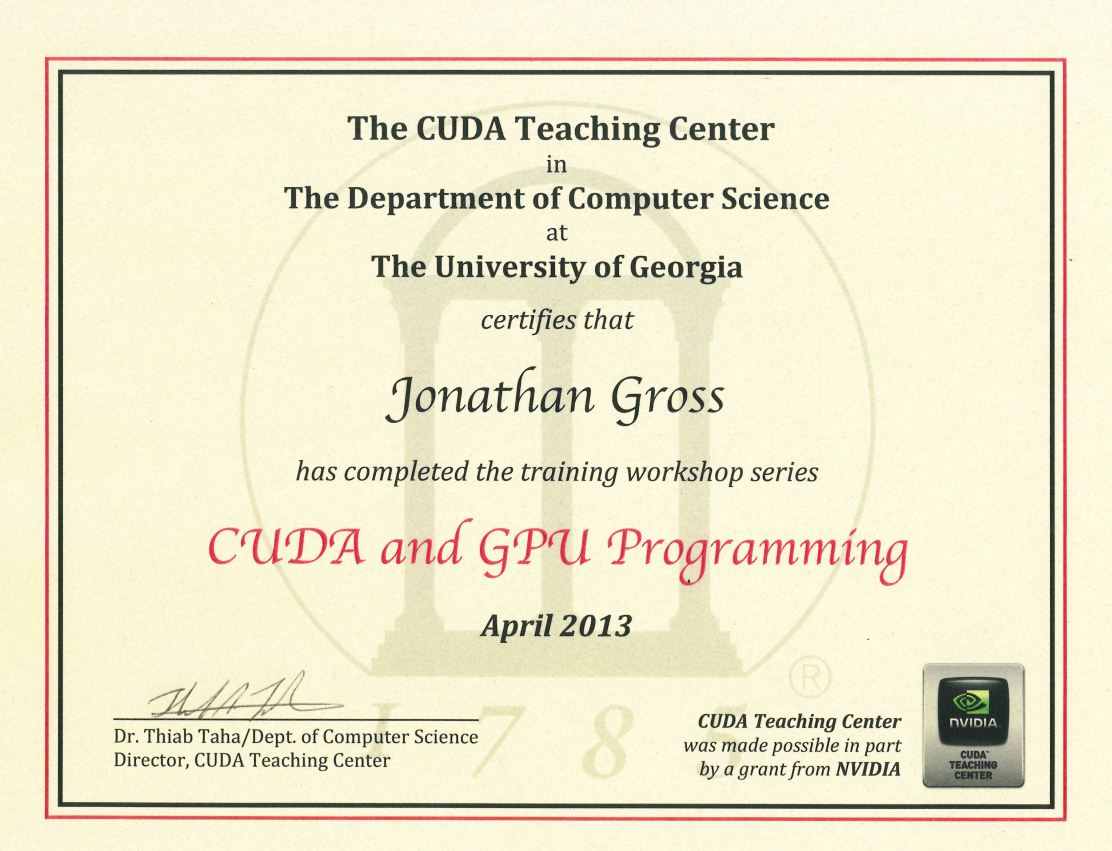
5. *GPU accelerated replica-exchange simulations of polymers*, March Meeting of the American Physical Society, Boston, MA, USA, 2013.

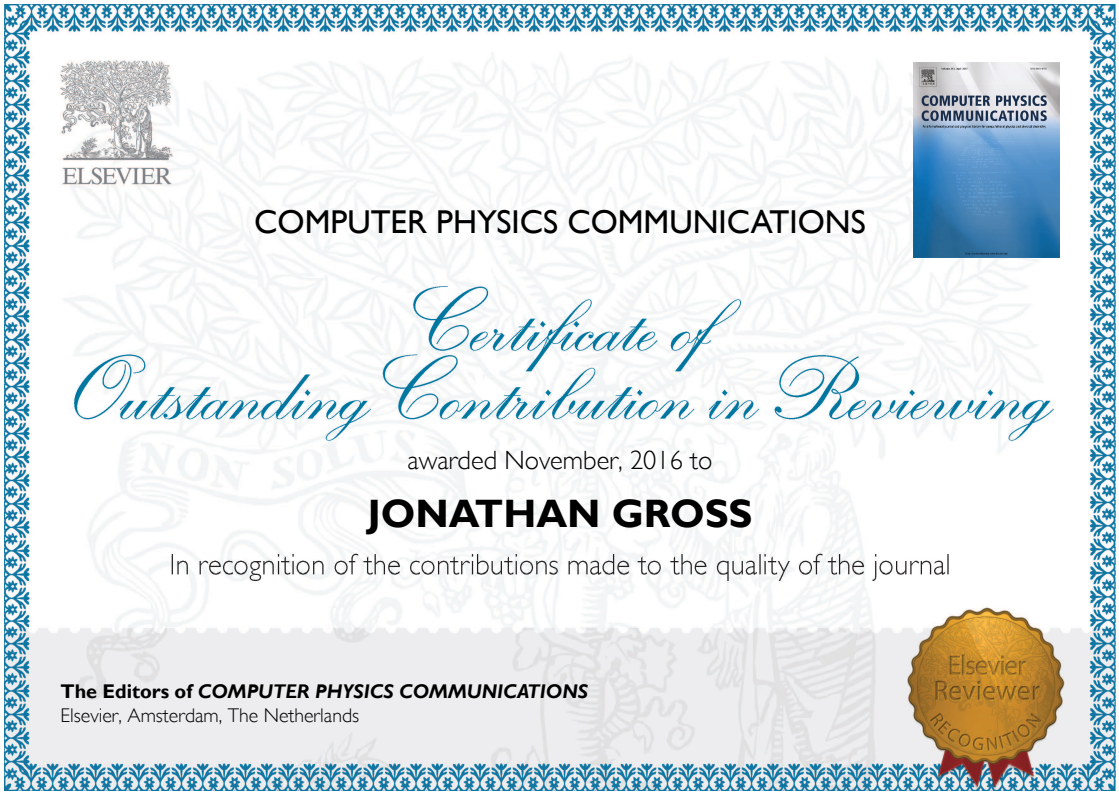
4. *Massively parallelized replica-exchange simulations of polymers on GPUs*, 24th Annual CSP Workshop, The University of Georgia, Athens, GA, USA, 2011.

3. *Massively parallelized replica-exchange simulations of polymers on GPUs*, 11th International NTZ-Workshop on New Developments in Computational Physics (CompPhys10), Leipzig, Germany, 2010.

2. *Massively parallelized replica-exchange simulations of polymers on GPUs*, Technion, Israel Institute of Technology, Haifa, Israel, 2010.

1. *Parallel Monte Carlo Simulations of Polymers*, Computational Biology Cluster Seminar (IAS-2/IFF-2), Jülich Research Centre, Jülich, Germany, 2010.

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