

LIA ISABEL JOHANNA STRENGE

PERSONAL DATA

born: 23/09/1989, Berlin

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OBJECTIVE

Scientific Curriculum Vitae

EDUCATION

since 11/2015 **PhD** **Technische Universität Berlin**
 Control Systems **Berlin, Germany**

PhD thesis: Modeling, control and simulation of swarm type DC microgrids (working title).

Supervisor: Prof. Jörg Raisch; Graduate School: Berlin International School in Model and Simulation based Research (BIMoS, fellow)

10/2012-09/2015 **International MSc** **Technische Universität Berlin**
 Scientific Computing **Berlin, Germany**

Master's thesis: Modeling and simulation of a droop controlled swarm type low voltage DC microgrid in a DAE framework.

10/2011-09/2012 **MSc** **Technische Universität Berlin**
 Renewable Energy Systems **Berlin, Germany**

Partly done.

01/2012-06/2012 **MSc** **Istanbul Teknik Üniversitesi**
 Energy Science and Technologies **Istanbul, Turkey**

Erasmus semester including 4 weeks language course at the Hacettepe Üniversitesi, Ankara; partly transferred to MSc Scientific Computing and MSc Renewable Energy Systems.

10/2008-08/2011 **BSc** **Technische Universität Berlin**
 Energy and Process Engineering **Berlin, Germany**

Bachelor's thesis: The Honigmann-Process as thermochemical energy storage for the production of mechanical work from low-temperature heat - Modeling and Simulation in Modelica.

See list of publications.

09/1999-06/2008 **Abitur** **Friedrich-Engels-Gymnasium**
 Focus: Spanish, Mathematics **Berlin, Germany**

Spanish-German bilingual Abitur (a levels).

09/2005-06/2006 **1º de Bachillerato** **IES Drago**
 Focus: Science and Technology **Cadiz, Spain**

Self-organized exchange student in shared flat; first year of a levels at the Instituto de Educación Secundaria (IES corresponds to Gymnasium).

EXPERIENCE

12/2013-11/2014 **Technical Consultant** **MicroEnergy International GmbH**
 Competence Center for **Energy and Finance Consultancy**
 Energy and Technology **Berlin, Germany**

09/2010-10/2010 Intern

Hüttinger & Pothoff Metallbau GmbH
Berlin, Germany

Industrial internship. Metal processing.

08/2010-09/2010 Intern
Material Sciences

Izmir Institute of Technology
Izmir, Turkey

Self-organized through Heat Powered Cycles Conference 2009.

Work: Research report about strong adhesive.

LIST OF PUBLICATIONS

Lia Strengé, Hannes Kirchhoff, Latjor G. Ndow and Frank Hellmann. Stability of meshed DC microgrids using probabilistic analysis. Submitted to IEEE 2nd International Conference on DC Microgrids 2017.

Ann-Kristin Baum and Lia Strengé. The Honigmann process, a mathematical study. Preprint 4–2015, Institut für Mathematik, TU Berlin, Str. des 17. Juni 136, D-10623 Berlin, FRG, 2015.

Anna Jahnke, Lia Strengé, Christian Fleßner, Niklas Wolf, Tim Jungnickel and Felix Ziegler. First cycle simulations of the Honigmann process with LiBr/H₂O and NaOH/H₂O as working fluid pairs as a thermochemical energy storage. *International Journal of Low-Carbon Technologies*. 8(suppl 1):i55-i61, 2013.

INVITATIONS

Talk *Introduction to modeling, control and simulation of swarm type DC microgrids*, Potsdam Institute for Climate Impact Research (PIK), Potsdam, Germany, May 10, 2016

Research stay *Evaluation of the first pilot project on swarm electrification*, United International University Dhaka and ME SOLshare Ltd., Bangladesh, March 2016 (3 weeks)

SCIENTIFIC EVENTS

Workshop on Industrial and Applied Mathematics, University of Hamburg, Aug/Sept 2016 (talk: *It's all about power: modeling and control of swarm type DC microgrids*)

CoNDyNet Summer School *Stability of Electricity Grids*, Jacobs University Bremen, June 2016 (participant)

Conference *Perspectives in Nonlinear Dynamics*, HU Berlin, July 2016 (poster presentation: *(S)Warm up - towards a hybrid model of swarm type DC microgrids*)

TU Workshop *The Way Forward in Energy and Development*, TU Berlin, July 2016

Conference *Tech4Dev 2016*, EPFL Lausanne, May 2016 (poster presentation: *Excess for Access. Definition and modeling of swarm type DC microgrids*)

Summer School *Energy Based Modeling, Simulation and Control of Complex Physical Systems*, TU Berlin, Apr 2016 (participant)

European Embedded Control Institute Course *Control of discrete event systems*, TU Berlin, Mar 2016 (participant, orga assistance)

Winter School *Compressed Sensing*, TU Berlin, Dec 2015 (participant)

Conference *Micro Perspectives for Decentralized Energy Supply*, Mar 2013 (orga assistance)

Conference *Heat Powered Cycles*, TU Berlin, July 2009 (orga assistance)

HONORS AND AWARDS

Erasmus Scholarship SS 2012, Istanbul Teknik Üniversitesi, Turkey (2012, monthly financing)

Honor for best graduates by the Association of German Engineers VDI, Berlin (2012, 1 year membership)

Suggestion for the Studienstiftung des deutschen Volkes by Prof. Ziegler (2009, rejected by myself)

A-levels prize of the German Mathematical Society DMV (2008, 1 year membership)

Book Scholarship of the Spanish Ministry of Education (2008, 600 Euro grant)

MEMBERSHIPS

Gesellschaft für Angewandte Mathematik und Mechanik (GAMM)/Society for Industrial and Applied Mathematics (SIAM) Student Chapter Berlin (since foundation in 2015)
Modelica User Group Berlin (since 2011)
German Society of Refrigeration and Air Conditioning DKV (2010-2013)
German Mathematical Society DMV (2008-2009)

LANGUAGES

| | | |
|----------------|---------|--|
| German | Native | Native speaker |
| Spanish | C2 | Bilingual school, (DELE Superior 2007) |
| English | C2 | Study, work, traveling |
| French | C1 | Study, work, traveling |
| Turkish | B2/C1 | Study, language courses, tandem |
| Russian | A2 | Language courses, traveling |
| Arabic | A1 | Language courses, traveling |
| Bangla | A1.1 | Self-educated, traveling |
| Korean | – | Alphabet only |
| Latin | Latinum | Self-educated, later school |

EXTRACURRICULAR ACTIVITIES

- since 04/2016** **Organizer** **Sterngartenodyssee
Berlin, Germany**
Coordination of TU Berlin group for Community Supported Agriculture.
- since 07/2015** **Vice president** **GAMM/SIAM Student Chapter
Berlin, Germany**
Activities: organization of the series *Show your workplace*; paper work; tools seminar participation.
- 01/2013-06/2013** **Promoter, Collector** **Energietisch Berlin e. V.
Berlin, Germany**
Initiative for a publicly owned electricity grid and 100% renewable energy generation in Berlin.
- 03/2009-06/2011** **Founder, Manager and Member** **INGrün
Berlin, Germany** **Environmental university group**
Activities: Introduction of the CampusCup and CupCycle for the reduction of plastic/paper cups at the university; information on nuclear energy with the title "RWE - Richtig Wenig Erneuerbare"; larger vegan/vegetarian/regional/saisonal/organic food offer and its labelling in the Studentenwerk canteens; movie show "Food Inc."; sustainability as topic in all study programs.
- 10/2010-06/2011** **Member of federal execution** **Campusgrün
board, Speaker** **Berlin, Germany**
Association of green-alternative university groups.
Activities: Networking for the member groups; seminars about university politics.
- 03/2009-06/2011** **Delegate** **Student parliament TU Berlin
Berlin, Germany**
As member of INGrün.
- 10/2009-10/2010** **Delegate** **Federal political conventions
Germany**
For a political party, Berlin Mitte.
- since 2008** **Volunteer** **Various
Europe**
Election assistant (national elections, Berlin-wide referendums); teamer at the Erstsemestereinführung of Faculty III and V, TU Berlin (several times); translation of the rototom sunsplash festival website 2012 (Spanisch-German, Spanish-English); cooking for refugee camps; and many more.

INTERNATIONAL EXPERIENCE

2005, 9 months, Spain (school)

2008, 4 weeks, Costa Rica (backpacking)

2011, 8 weeks, India and Thailand (backpacking)

2011, 3 weeks, Northern Europe via hitchhiking (backpacking)

2012, 3.5 months, Ankara, Istanbul (language course, Erasmus semester)

2012, 3 weeks, Turkey, Iran (backpacking, land travel only)

2012, 6 weeks, Morocco, Algeria, Tunisia (backpacking, land travel only)

2012, 2 weeks, Southern Europe via hitchhiking (backpacking)

2013, 3 weeks, Berlin, Turkey, Georgia, ferry to Ukraine, Poland (backpacking, partly hitchhiking)

2014, 4 months, Pakistan, India, Bangladesh, Nepal (consulting, field work, land travel)

2014, 2 weeks Armenia (consulting, field work, land travel back to Berlin)

2014, 5 months, Bangladesh (consulting, investor forums, field work)

2016, 3 weeks, Bangladesh (research stay)

COMPUTER SKILLS

Latex, Linux, MATLAB, Octave, Office, PLECS, Python, Scilab, Scicos, Simulink, Xcos.

SELF-EDUCATED SKILLS

Blogging (beginner)

Latex (advanced)

Linux (advanced)

Programming in Java, C++, FORTRAN, MySQL (beginner)

NON-ACADEMIC HOBBIES

Activism (bottom-up politics, environment, fair trade, veganism and animal rights)

Bicycles (cycling and repairing)

Computers

Juggling and Acrobatics

Languages (grammar, evolution of languages, connection between languages)

Politics, Philosophy

Sports (boxing, climbing, jogging [Berlin Marathon 2009], sailing, surfing, swimming, (beach) volleyball)