Steffen Plunder

M.Sc. Mathematik

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math.stackexchange

Education

2004 to 2013	**Gymnasium**, Trifels Gymnasium Annweiler, Final grade: 1,6.
2013 to 2016	**Bachelor Mathematics**, TU Kaiserslautern, Final grade: 1,1. Specialisation: Modelling and scientific computing, Application subject: Physics, Thesis: Molecular Dynamical Simulation for Polymers.
WS 2016/2017	**ERASMUS Semester**, TU Delft.
2016 – 2018	**Master Mathematics**, TU Kaiserslautern, Final grade: 1,1. Specialisation: Partial differential equations, Application subject: Physics, Thesis: Fiber based Lagrangian Modelling and Simulation of Skeletal Muscle Tissue.
1.3.2018 – 13.6.2018	**Academic visit**, The University of Auckland. Project: Multiscale simulation of flows in saliva glands. Supervised by Prof. James Sneyd.
1.10.2018 to 30.11.2018	**Academic visit**, Haussdorf Center of Mathematics, Bonn. Project: Extension of a multiphase material simulation. Supervised by Prof. Martin Rumpf and Dr. Behrend Heeren.
since 1.10.2019	**PhD candidate**, University of Vienna, Supervised by Sara Merino-Aceituno. Kinetic Theory and Applications to Biology

Publications

2020 Plunder, S. and Simeon, B. (2020). *Coupled Systems of Linear Differential-Algebraic and Kinetic Equations with Application to the Mathematical Modelling of Muscle Tissue.* In Reis, T., Grundel, S., and Schops, S., editors, *Progress in Differential-Algebraic Equations II*, Differential-Algebraic Equations Forum, pages 357–395, Cham. Springer International Publishing

Work and Teaching Experience

2014-2016 **Tutor**, *TU Kaiserslautern*.
Höhere Mathematik I: Analysis (for engineers)
Foundation of Mathematics I (for Mathematicians and Physicists)
Foundation of Mathematics II (for Mathematicians and Physicists)

WS 2017/2018 **Tutor**, *TU Kaiserslautern*.
Numerical methods for linear algebra and analysis

2012 – 2016 **Programming assistent**, *Fraunhofer Institut für Wirtschafts- und Technomathematik*, Department of Image Processing.
GUI programming (Qt) and bug fixing within a C++ project.

2016 – 2017 **Programming assistent**, *TU Kaiserslautern and TU Delft*, Research groupd for differential algebraic systems.
Algorithms for parameterisation and optimisation of NURBS surfaces with C++ and G+SMo (Geometry, Simulation and Modelling).

WS 2018/2019 **Organisation and Tutor**, *TU Kaiserslautern*.
Computer lab: Numerical methods for linear algebra and analysis

1.12.2018 to 30.9.2019 **Researcher**, TU Kaiserslautern, Supervised by Prof. Dr. Bernd Simeon.
AG Differential-Algebraische Systeme

Workshops

30.1.2017 – 2.2.2017 **G+SMo Developer Days**, *TU Delft*.
Talk: Optimization of B-Spline Parametrizations using G+SMo and IPOPT

28.9.2016 – 30.9.2017 **Mathematische Methoden in Big Data**, *Felix-Klein-Zentrum*.

9.3.2017 – 10.3.2017 **Models and Methods of Robust Optimization**, *ITWM*.

11.9.2017 – 14.9.2017 **19th ÖMG Meeting and Annual DMV Meeting**, *Salzburg*.
Talk during the Students conference: Symplectic molecular dynamics.

27.9.2017 – 29.9.2017 **Networks and Uncertainty**, *Felix-Klein-Zentrum*.

18.2.2019 – 22.2.2019 **GAMM, 90th Annual Meeting**, *Vienna*.
Talk: Lagrangian perspective on skeletal muscle models

18.3.2019 – 20.3.2019 **DESCRIPTOR**, *Paderborn*.
Talk: Partially mesoscopic and Lagrangian systems

14.12.2020 – 18.12.2020 **MAFRAN Winter School 2020**, *online*.

Languages

German	mother tongue	
English	fluently	*Level: C1*
Mandarin	beginner	*Level: A1*

Computer skills

OS	Linux (very good), Windows (good)
Database	SQL
Tools	Inkscape (good), LaTeX (good), GIMP (good), HTML, CSS
Programming languages	Julia (very good), C++ (very good), Javascript (very good), Python (very good), MATLAB (good), C (good), C#, Java, Lua, R, SINGULAR.
Frameworks	Qt/PyQt (very good), DifferentialEquations.jl (good), numpy/scipy (very good), FEniCS (very good), boost (good), Eigen (good), OpenGL (good), OpenMPI (good), G+SMo, IPOPT, VTK, SFML, SDL.

Prices

2013	Abiturpreis Mathematik, Abiturpreis Physik. (Price for math and physics after secondary school.)
2014 – 2016	Deutschlandstipendium (scholarship)
2016 – 2018	Felix-Klein scholarship by Fraunhofer ITWM
2017	Main price on the DMV Students conference 2017 (Funded research trip to Bonn)
2018	DAAD-PROMOS scholarship (academic visit in Auckland)

Activities

2014 – 2018 **Fachschaftsrat (student council)**, *TU Kaiserslautern*.
During my commitment for the student council, I worked as: system administrator, outlook lectures, main organisation of the math party, Student-Talks, public relations, breakfast, beverage service, loan service.

2015 – 2018 **Various university commissions**, *TU Kaiserslautern*.
I was part of the following committees as a student member: Department council (math), libary commission (senat), committee for studying and teaching (math), student representativ in the examinations board (math)

since 2017 **member of the social democratic party (SPD)**.

since 2020 **Speaker of the Vienna School of Mathematics (VSM)**.
Organisation and initiation of events such as a mini course on string theory, workshop on carrer possibilities for PhD students and gender aspects, various social events.