

Curriculum Vitae



Name: Dr. rer. nat. Süleyman Ralph Haberkern
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Birth: *01.05.1972 Vaihingen/Enz, Germany
Family Status: Married with Mrs Ritah Bigita Naluta, 2011

Education

Since 07/2011 QM and PRM Automotive: Freelance Mentor of R. Wollny (TRW) Ph.D.

2006-2008 Founder of AICES RWTH Excellence Graduate School

08/2005 CAD Constructor Autocad and Catia, 99%

01/2004 Ph.D. in natural sciences (Dr. rer. nat.). Grade: A.
"Total and Partial Homogenisation for
Low Frequencies and Small Wavenumbers in Elasticity"

1991-1997 University of Stuttgart, Study of Mathematics.
Bachelor: B, Master: B. Minor: physics: good.
Master Thesis: A-: BEM for elastic contact with friction.

1982 -1991 High School: Friedrich Abel Gymnasium Vaihingen/Enz
Intensives: Mathematics, Physics; 97%
Degree: Abitur 92% (1.4).

Employment

Since 01/2011 Freelancer der-Kontrolleur.de

05/2010-12/2010 Building physicist for acoustics, thermal insulation, machine vib.-
insulation, at braune-roth, swiss. In-situ measurements, consulting, SIA
norms, reverberation optimisations, machine vib.-insulation, fire
protections, moisture tracking, visualisations, IT-Sec.

03/2008 – 12/2008 Application Engineer, SLCR Lasertechnik Düren, Germany.
Speciality Production machinery with Laser surface treatment.
Machine Vision, Siemens Communication. Delphi, MS VB2008

11/2005 - 02/2008 Postdoctoral Researcher, RWTH Aachen University, Computational
Materials Engineering, Prof. Emmerich. Chemo-structural dynamics of
Cement, Crystallisation of Metals. C, Mathematica.

08/2005 - 10/2005 Autocad 2005 Training (2D, 3D) und Introduction to Catia V5.

10/2004 - 10/2005 Reorientation after Ph.D.

04/1998-09/2004 Research Assistant, Fraunhofer Institut für Bauphysik, Stuttgart.
Building Acoustics. apl.Prof. W. Maysenhölder: Models for sound
transmission in structures. Material properties. Delphi, C, Mathematica.

Supervision / Advisory

Since 07/2011	Advisory of Ph.D. student Rafael Wollny, Automotive Supplies.
10/2006 – 02/2008	Member of the Steering-Committee AICES graduate school, RWTH Aachen University. Advisor of Ph.D. Student Z. Ebrahimi.
2007	Co-Advisor of Rashid Ijioui on Supply Chain Management
2006-2008	Assistant of Lecture „Dynamik technical systems N“. (HM4). RWTH Aachen, Exercises, Exams.
2003	Advisory of Master student J. Frommherz University of Stuttgart.
1999-2008	Supervision of in total 9 scientific student assistants. University of Stuttgart, RWTH Aachen
1993-1995	Tutor of „Higher Mathematics 1-3“. Exercises, Group.

Internships

06/2011	Internship at Recticel Interior Rheinbreitbach: Car Dash panels.
02/2010 (2 weeks)	Internship at a small IT company: Joomla etc.
01/2010 (2 weeks)	Warehouse clerk at Deurer Tiernahrung Bretten. Introduction of SAP system in repackaging facility.
09/2009 (1 month)	Short-term Employment as Physicist for Klaschka Automation Lehnigen. Simulation of magnetic fields of print coils and inductivity for inductive sensors.
07/2009 (2 weeks)	Telemarketing internship Telepower Sternenfels.

Programming Skills:

Microsoft Visual Basic 2008 Express for Machine vision and SPS: very good.
Ansi C with fortran libraries for parallel scientific computing: excellent.
Delphi for scientific tools and machine control: good.

Mathematica: validation, expansions, symbolic computation and visualisation: Excellent.
Matlab: Matrix computations, Splines. Experienced. Octave. Experienced.
Excel for scientific applications. Good.

CAD: Autocad Inventor, Autocad 2005. Excellent. Catia V5: Part, Sketcher: Good.
SPS: Siemens Sinamics S7, Adept V+.
SAP: Barcodes and Scanners, SPS communication

Special Fields of Knowledge:

Physical laws and modelling: Mechanics, Acoustics, Diffusion.
Materials properties of structures. Modelling of Technical Systems.
Machine Vision. Machine control.
Advanced Numerical methods, Complex coupled dynamic physical systems.

Bad Honnef, 25/12/2011

Ralph Habermann

Dr. Ralph Haberkern

Academic Profile

Ralph Haberkern, Dr. rer.nat.

to whom it may concern

Dear Sirs, enclosed You find my Application for a Position in Your University. I am looking for a position as Lecturer in Science and Engineering, and would like to participate in educating students and mentoring master and Ph.D. thesis.

I have achieved major Advances in materials sciences, starting with my diploma thesis on nonlinear boundary conditions in elasticity, to the prediction of local anisotropic materials properties for arbitrary subdomains in accordance to experimental modal analysis tests through asymptotic analysis and energetic means.

I derived a model for particle-suspension chemistry based on moving boundaries in finite differences. It allows multi-chemical simulation of e.g. hydration of cement from its initial stage to corrosion and carbonisation issues after hardening, and enables determination of absorption coefficients and flow resistance during reaction.

I have been mentoring Ph.D. students of economy on topics like supply chain management and the quality control in spare parts markets.

I contributed to industrial Science during practical experience as engineer in machine construction. I developed e.g. new fundamental Machine vision concepts and designed excellent machines with high customer satisfaction.

I am thinking about the future of life and the energy market.

I have contributed to the new Automotive Hybrid Market through publishing the administrated three-phase Lithium Accu and its impact on the energy market due to its storage capacity and the total energy demand for electric cars. Using electric cars will need about 25-50% of today's total electric production. Whereas vans better run on biodiesel or sprinters methane, and Hybrid concepts for trucks include electrification of its highway track. I also contributed on energy storage devices and plants, such as Ni-Fe accus for wind farms or as central storage plants, or potential energy storage through river tablelands or dynamic running water river plants still allowing for transport lanes. And I proposed Biogas through Pyrolyse and methageneous bioreactors, and upwind wind farms, or connecting static frameworks for oceanic windfarms. I suggested seawater-evaporation based autonomous plants for 1TW planet cooling, and I thought about ammonium carbonate issue on CO₂, and using CO₂ dissolution for geothermal energy and reviving oil and gas fields.

I can offer help in developing countries, say, I can reduce moskitoe pests biologically, I can offer new solutions for biomass products for export or internal use, such as pellets or cheap materials for oven heating, I can derive drinking water where there is none, I can change wood into eat if necessary.

I have contributed advice on Fukushima and Oilspills, and other catastrophies. Also, I have given several contributions for Military R&D

I have a Broad EDUCATION in SCIENCE, I'd like to share and help in practice.

I want to work at Your University, and settle and found family.

Ralph Haberkern

Dr. Ralph Haberkern

General Profile

Ralph Haberkern, Dr. rer.nat.

to whom it may concern

Dear Sirs, enclosed You find my general Application for a Position in Your company. I can do an excellent Job in one of the following or affiliated sectors:

Mechanical Engineering, Machine Engineering, Research and Development Departments in Production Industry, Finite Element Analyst and Multiphysical Simulations, Image Recognition, Software Development, Computer Aided Design, Computer Aided Engineering and Manufacturing, Materials Engineering, Acoustics, Assistant Professorship or Lecturer in Physics, Mathematics or Acoustics, Military R&D

This document now gives a summary of my most important skills and experiences.

Personal details:

Name: Ralph Haberkern,
Titles: Dr. rer. nat., Dipl. Math.
Address: Siebengebirgsstr. 3-2, 53572 Unkel, Germany.
Contract: e-mail: hbrkrn@yahoo.de, Tel. +4922249600890
Age: 39.
Place of Birth: Vaihingen/Enz, Germany.
Professions: Mathematician, Physicist,
CAD Constructor, Application Engineer

Special Fields of Knowledge:

Applied Mathematics, Mechanical and Electrical Physics,
Acoustics, Material Properties of Minerals, Metallurgy and Composites.
Production Machinery, Machine Vision, Management

Motivation:

I studied Maths and Physics because I want to solve complex issues in industry where good knowledge of natural sciences and advanced numerical methods is needed in order to create simulation-based multi-optimized high-tech products. I have the skills for design of new production schemes, new materials, new products and new applications of asuch, and I can handle and solve former chestnuts with ease for various target functions. I work hard for Your company, and I accomplish goals in time. My primal objective is the return of invest and total customer satisfaction.

Experiences:

Mentor of Ph.D. thesis “Quality assurance and Product Recall Management in Automotive” 07/2011. Rafael Wollny (TRW).

Poll on QS and PRM. Statistical Analysis. Automated Correlations. Publ. Pending.

Broad experience in Automotive structure from vendors and suppliers to manufacturing and the role of engineering services, as well as the importance of quality assurance and PRM and how it is carried out in practice. Broad knowledge of statistical numbers on casualties, injuries, accidents and insurance damage claims and reasons for accidents vs. number of cars, driving performance, age groups, and the improvements on passengers safety and the need for active driving assistance (ESPIII) for reduction of accidents.

Internship Interior Solutions Recticel Rheinbreitbach, Germany, 06/2011

Production of PU interior solutions like door interior or car dash panels

Times of unemployment 2005 when I looked for my wife Susi. Then Winter 2008, due to machine crisis, where e.g. Ruecker stocks dropped from 15Eur to 3.85 Eur, and more than 30 000 people became unemployed in this sector. Then 2011 trying to found new family stumbling right into Euro currency crisis, just married to my new wife Ritah and looking for new work.

Building Physicist at braune-roth, Rorschacherberg, SG, Swiss, 05-12/2010

General acoustics: in-situ sound insulation measurements, sound immission calculation and reports, room acoustics and reverberation optimisations, sanitary and climatisation noise prediction and measurements, noise and vibration dampened machine beddings, SIA norms. Construction layout of roofs, walls and doors and beddings for optimum acoustics. Citibank Zurich zur Enge, Hotel Belvoir Rüslikon, Swisslife Westlink, Haldengut Estate Winterthur, and countless family houses.

Thermal isolation: Swiss Minergie-standard reports & buildings design. Layout of windows, shading, floor, roofs and wall-insulation systems for houses and large building complexes. Climatisation and heating layout in accordance with Minergie standards. Whole age-care clinicum complex, family houses, container extension St Gallen hospital, etc. Building misfits assessments: in-situ investigation of moisture damages, thermal insulation and shading, acoustics, fire-protection, and inspection of architect's construction plans. Designs: Templates for SIA-conform measurements and reports in Word and PPT, Calculation sheets in Excel for machine beddings, room reverberation, sound immission calculations.

SAP Field specialist at Deurer Animal Food, Bretten 01/2010. 2 weeks. Set up SAP in warehouse repackaging, including Database debugs and practical introduction of handheld scanners.

Physicist for Klaschka Automation, Lehningen Germany 09/2009. (task-based)

I set up an Octave development environment and wrote a program for the simulation of magnetic fields for print coils and their respective inductivity.

Application Engineer at SLCR Laser Techniques, Düren, Germany. 03-12/2008

VB2008 Siemens SPS Machine Control with self-written SPS PC Import, ABSOFT GenICam Gigevision and U-Eye Camera Interface with drill position and symmetry recognition for drilling hole circles and automatic two-height adjusting process with minimum parameter human interface for imaging-to-robot axis setup. Simultaneous control of two lines with one IPC. Success Statistics with CSV database and autoscaling Graph. The machine processes light-alloy rims 12 s each, and cleans the fixing drills from paint by laser erosion. In total, three machines sent to Borbet, Solingen, Work fine. I designed the whole imaging system and software.

Additional Experiences:

- High accuracy positioning of Laser engraving on production-deformed tyres Conti, Otrcovice CZ for run-flat encoating label. Delphi.
- Extension of form-cleansing robot program for Faurecia / Daimler Crysler, AdeptV5
- CAD of robot setup for decoating of carbon fibre airplane hulls. Autocad Inventor.
- Microcontroller Assembler Algorithm Corrections, Finite Difference Simulation of Shape Optimisation for Gas Laser Electrodes.
- Experienced in Remote Desktop and VNC and Shared Programming.

Due to crisis in machine sector 2008/9, and divorce, I painfully lost this job.

Young Researcher AICES, RWTH Aachen University, Germany 11/2005-02/2008

German research Foundation projects on concrete microstructure simulation: hardening, porosity, interaction with chemicals and high temperature resistancy. Metallurgy of two-phase alloys, austenitic and martensitic phase change of steel, Hydrogels under multiphysical influences. Setup and application of interdisciplinary joint project proposals. Setup of the international graduate School Aices (www.aices.de), as a founding member in the steering committee. Screening of young research group leaders and doctoral student applications, First doctoral Student. First experiments. Purchase of high performance computer on a 1+10opt capacity basis. Successfully lead my doctoral student through the first phase of her project. Then left to industry due to time contract issues and financial issues. I also operated as assistant of Prof. Emmerich, responsible for the exams and exercises of the lecture higher mathematics four.

CAD Training Autocad Mechanical 2005 08/2005-10/2005

CAD Training in Autocad Mechanical 2005, 2D and 3D. Complex construction issues like transmissions, whole pumps, as well as architecture of buildings and construction setups. Catia V5 Modules Part and Sketcher. Later on, Autocad Inventor at SLCR. I also trained myself in business administration.

Research Assistant at Fraunhofer Institute of Building Physics, Stuttgart. 04/1998-09/2004

My primary objective as research assistant of Prof. W. Maysenhoelder was the development of scientific software predicting sound transmission, eigenvibrations, and as inverse problems, determine material properties of anisotropic materials and structures. I also worked for the head of the department for minor tasks, such as stable evaluation of the complex equation $z \tan z = C$ for arbitrary branches. I was responsible for the exercise materials of the lecture sound transmission loss. I processed experimental modal analysis data to derive isotropic material properties. One of my achievements was a semi-analytic approach towards effective calculation of diffuse sound transmission loss for thin anisotropic plates, along with a new curve approximation, using Excel with Mathematica plugin. Results have been successfully compared to measurements. I developed a program for sound transmission of thick periodic walls, available on video at IBP, showing the structural behaviour under sound transmission. In my Ph.D. thesis, I developed a theory on partial homogenisation along with the respective parallel computing software, which enabled prediction of effective elastic behaviour of arbitrary sub-structures of any complex structured thick periodic wall or three-dimensional periodic setup. As a major application I could predict the properties of hollow-brick walls with free vertical joints in dependency of plaster layers, brick format, interior structure, hull strength, etc. This software allows prediction of the effective properties of the inner structure, the brick, the inner wall or the whole plastered wall, and is of general use, just requiring

the material properties of the components the structure is made from. I could show how the anisotropy of the inner structure of a brick interacts with the brickworks with free vertical joints, and I could explain the high transmission loss of certain hollow brick walls as combination of the coincidence and thickness resonance. As result of my calculations, I derived the effective properties of the wall, allowing to compute the sound transmission curve of an equivalent anisotropic layered thick wall. Besides Theory and Software, I proved in modal-analysis experiments on lime-stone brick walls that my approach allows determination of complete anisotropic material properties with error bounds below 4% in measured vs. predicted eigenvibrations. I attended an English discussion group and learned welding. I left Fraunhofer IBP in good after completion of my GRF grant for new vistas and to found a family.

Diploma Thesis and Study

9/1991-12/1997

In my studies I concentrated on applied mathematics, that is, all there is in higher numerics, ordinary and partial differential equations, some stochastics, function theory and functional analysis and high performance computing. In my diploma thesis I developed a boundary element method approach for simulation of contact zones in elasticity. This included full deduction of the complex fundamental solution for time-discretisation, stable series expansion patches of the highly complex Bessel function kernels for single and double layer potential, detecting and expanding all extinguishing singularities, even in canonical expansions, stable integrators for weakly singular, riemann-singular and hypersingular kernels. I successfully performed the simulation for one timestep, but gave the recommendation to couple it with finite elements for subsequent timesteps. This has then in fact been done so in a follow-up project. I am a specialist for stable evaluation and solution of functions and solutions. I am experienced with all kinds of boundary conditions and nonlinear, non-differentiable coupling and skilled in simulation of complex multiphysical setups.

List of Soft Skills:

CAD: Autocad Mechanical and Inventor up to date, good, high complexity 3D capability. I can design complete CAD construction layouts and building designs in 2D or 3D, as well as visualisations. I have successfully used Catia V5 Part and Sketcher and can work into other packages easily.

Scientific Computing in gcc based Ansi C, with parallel computing MPI and OpenMP, numeric fortran libraries, Lapack, Arpack, etc. Expert.
Debuggers: Gdb, totalview, insure, etc.
Experienced in self-verifying high performance computing Code.

Symbolic and Semi-numeric Computing:

Mathematica Expert, skilled in Matlab and Octave.
2nd backbone to implementations. Expansions, integrals, visualisation, etc.

Powerpoint: Expert in Presentations with master foils and Animations.

Excel: Experienced, also Plugins. Just started direct VBA programming.

Scientific writing: Very good in Latex and Word. **Have a look at my Ph.D. thesis.**

Object Oriented Programming: Experienced VB2005,2008,2010 programmer, also Delphi. various plug-in libraries. Graphics, stable CSV handling, Machine vision and

control. Experienced in Team Programming: Winmerge, Windiff, Remote-Desktop and VNC. Complete software solutions with intelligent GUI and high complexity computing kernels and plugins.

SPS: Siemens Sinamics S7, Adept V+. system setups, modify applications, PC - SPS communication, update-friendly SPS PC Imports, Error handling, performance.

Management: Seminar on business rules.
Active Steering Committee member of Aices.

Additional Skills:

Fork lift operator licence.

Welding: Autogene, Electrode, Mag, Wig.

General Craftsmanship. Done almost everything. See additional list.

Motto:

a Heart for our Families

Evaluation:

I am a scientific senior software engineer with experience in machine construction and materials. Experienced in leadership, I can lead a developer group and challenging projects to success. Experienced in engineering, I can design new machines and devices, optimise performance and production, and achieve optimum material quality. I offer innovation and ideas with highest possible return of invest on the bleeding edge of Technology, Engineering and Science. Let me work for Your business, You will be totally satisfied with maximum effective results.

I may travel without restriction. I work hard and until goals are met and beyond. You just need to sustain my livings, I don't want to get rich, I want to found a family. I can start right now.

Signature:

Bad Honnef, 25/12/2011
Dr. Ralph Haberkern

