

Application Form



Philipp Scholl

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Curriculum Vitae

Personal Information

Name Philipp Scholl
Address 5 Merchants Place, Stephen Street
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Telephone +353 87 1922755
eMail rayleighsjeans@gmail.com
Date of Birth 15th of June 1994 in Demmin
Nationality Germany
Family Status married
Sex Male

Languages

German first language, mother tongue
English second language, first foreign lingo
7 years of school education
Russian third language, second foreign lingo
5 years of school education

School

08/2000 – 03/2004 **Elementary School**
Grundschule Jarmen
Jarmen
08/2004 – 08/2010 **Middle School**
Regionale Schule Jarmen
Jarmen
08/2010 – 06/2012 **Academic High School**
Schlossgymnasium Gützkow, Gützkow
Higher Education Entrance Qualification
(Certificate included)

Higher Education

10/2012 – 09/2015 **Bachelors Degree in Physics**
Ernst-Moritz-Arndt University, Greifswald
Bachelor of Sciences (Certificate and course overview included)

- 10/2012 – 10/2017 **Master's Degree in Physics**
Ernst-Moritz-Arndt University, Greifswald
 Master of Sciences (Certificate and course overview included)
- 11/2017 – now **Doctor of Philosophy - Physics**
Max-Planck Institute for Plasma Physics, Greifswald
 Submission, defense pending

Professional Experience

- 07/2021 – 04/2024 **Software Developer - C/C++**
Krauss-Maffei Wegmann Nexter Defense Systems, Munich
 Advanced C/C++, embedded development, frameworks, APIs, AI, computer generated forces, dynamics & simulator logic
- 11/2017 – 05/2021 **Researcher/Scientist, Ph.D. - Plasma Fusion**
Max-Planck Institute for Plasma Physics, Greifswald
 Project management, large scale data analysis, science, modelling, simulation, embedded development, international collaboration, professional documentation

Training

- 02/2022 **Advanced C++ (for Embedded Systems)**
MicroConsult Microelectronics Consulting & Training GmbH, Munich
 basics, patterns, idioms, 'modern style' C++

Technical & Software Development Experience

- 2021-24 **Software Engineering**
Krauss-Maffei Wegmann; Software Architecture & Components, Munich
 advanced C/C++; agile development and design; extended unit, component and regression testing; embedded development; (physics) simulation and AI
- 2017-21 **Data Acquisition Development**
Max-Planck Institute for Plasma physics, Greifswald
 embedded C++ development for data acquisition; Python: large scale data generation, modelling, evaluation and visualization, stereoscopic thomography and simulation
- 2016-17 **HPC C/C++ Particle-In-Cell Simulation**
Ernst-Moritz-Arndt University; Computational Sciences, Greifswald
 HPC C/C++ development for particle physics simulation of low-temperature gaseous discharges; Open/MPI & Slurm; multithreading
- 2016 **Neural Networks and Large Linear Optimizations**
Ernst-Moritz-Arndt University; Advanced Numerics, Greifswald
 introduction to and development of neural networks, Matlab
- 2015 **Stereoscopic Particle Tracking and Video Processing**
Ernst-Moritz-Arndt University; Complex Plasmas, Greifswald
 multi-camera system video analysis and stereoscopic 3D tracking of microscopic particles; development and construction of microelectronics for in-situ application

Research Experience

- 11/2017 – now **PhD: ‘Impurity radiation and transport at the stellarator Wendelstein 7-X’**
Division of Stellarator Dynamics and Transport, Prof. Dr. T. Klinger
Max-Planck Institute for Plasma Physics, Greifswald
real time feedback on plasma radiation, evaluation of local radiation sensitivity, Python & LabVIEW (C++) embedded software development
- 11/2017 – 05/2021 **International Helmholtz Graduate School for Plasma Physics**
Graduate School for Doctoral Candidates at the MPI for Plasma Physics
MPI for Plasma Physics, Greifswald; University of Greifswald
presentations and participation in colloquia, workshops and conferences
- 10/2016 – 10/2017 **Master Thesis: ‘Kinetic Effects in RF Discharges’**
Research Group of Prof. Dr. Ralf Schneider
Institute of Physics, University of Greifswald
C/C++ particle simulation code development - C++ 2d3v PIC simulation of ccrf discharges
- 04/2016 – 10/2016 **Research Group Internship**
‘Electric field strength spectroscopy in dielectric barrier discharges’
Research Group of Prof. Dr. Jürgen Meichsner
Institute of Physics, University of Greifswald
- 10/2015 – 07/2016 **Internship in the Group of Prof. Dr. Melzer**
Complex Plasma Systems, Experiment Setup
Institute of Physics, University of Greifswald
- 05/2015 – 09/2015 **Bachelor Thesis: ‘Modenanregung in Yukawa-Bällen’**
Research Group of Prof. Dr. Andre Melzer
University of Greifswald
Stereoscopic particle diagnostics with MATLAB

Lecturing Experiences

- 2014 – 2018 **Assistant Associate in the Practical Course - Physics**
in: Study Programme of Humane Medicine
Institute of Physics, University of Greifswald

Publications (Excerpt)

- May 2018 **‘PIC Simulation of electronegative CCRF discharges’**
Authors: P. Matthias, R. Schneider, J. Meichsner, G. Bandelow, J. Duras, K. Matyash, K.-F. Luskow, D. Kahnfeld, S. Kemnitz, L. Lewerentz and P. Hacker, doi: 10.1140/epjd/e2017-80565-y
- Jul. 2019 **‘The influence of impurity radiation locations on the plasma performance in stellarator Wendelstein 7-X’**
Authors: D. Zhang, R. Burhenn, F. Reimold, P. Hacker, L. Giannone, K. J. Brunner, B. Buttenschön, G. Fuchert, H. P. Laqua, K. Rahbarnia, C. D. Beidler, S. Brezinsek, Y. Feng, M. Jakubowski, R. König

- Jan. 2023 **'First feedback-controlled divertor detachment in W7-X: Experience from TDU operation, prospects for operation with actively cooled divertor'**
 Authors: M. Krychowiak, R. König, T. Barbui, S. Brezinsek, J. Brunner, F. Effenberg, M. Endler, Y. Feng, E. Flom, Y. Gao, D. Gradic, P. Hacker, J.H. Harris, M. Hirsch, U. Höfel, M. Jakubowski, P. Kornejew, M. Otte, A. Pandey, T.S. Pedersen, A. Puig, F. Reimold, O. Schmitz, T. Schröder, V. Winters, D. Zhang, doi: 10.1016/j.nme.2023.101363
- Sep. 2021 **'Plasma radiation behavior approaching high-radiation scenarios in W7-X'**
 Authors: D. Zhang, R. Burhenn, Y. Feng, R. König, B. Buttenschön, C.D. Beidler, P. Hacker, F. Reimold, H. Thomsen, R. Laube, T. Klinger, [...], the W7-X Team, doi: 10.1088/1741-4326/ac2b75
- Oct. 2021 **'Bolometer tomography on W7-X for study of radiation asymmetry'**
 Authors: D. Zhang, R. Burhenn, C.D. Beidler, Y. Feng, H. Thomsen, C. Brandt, S. Buller, F. Reimold, P. Hacker [...] and the W7-X Team, doi: 10.1088/1741-4326/ac2778

Extra-Curriculars & Extramural Activities

- 2007 – 2010 **Participation in the 'Baltic Sea School Exchange Program'**
 Finnvedens Gymnasium 'Figy'; Värnamo, Sweden
- 2011 **Qualification for the German Dragon Boat National Team 'Junior A'**
 Participation in the 10th IDBF World Dragon Boat Racing Championships
 Tampa Bay, FL; United States of America
 9 Gold Medals, 2 Silver Medals
- 2012 **Entering of the 'Hochschul-Sportgemeinschaft Greifswald e.V'**
 Department of Canoe/Dragonboat
 2015-2016 Trainer of the Dragon Boat Team 'Greifendrachen'
- 2017 **Qualification for the German Dragon Boat National Team 'U24'**
 Participation in the 13th IDBF World Nations Championships
 Divonne-Les-Baines, France
- 2021 – now **(Olympic) Weightlifting Team Participation**
ESV München Neuaubing – Local League and Individual Competitions
 County Oberbayern and Bavarian League 2021/22, 22/23, 23/24
 1st place Munich Championships '23, 2nd place Oberbayern Championships '23

Conferences & Workshops

- May 2019 **Consistently calculating the radiated power in near real time at the stellarator Wendelstein 7-X**
 P. Hacker, F. Reimold, D. Zhang, M. Krychowiak, R. Burhenn, T. Klinger, DPG-Frühjahrstagung der Sektion Materie und Kosmos (SMuK), Munich, Germany, 2019

- May 2019 **Plasma Terminating Events in Large Stellarators**
*D. Maier, A. Dinklage, J. Baldzuhn, R. Burhenn, R. Bussiahn, B. Butten-
 schön, P. Hacker, [...], the W7-X Team, DPG-Frühjahrstagung der Sektion Ma-
 terie und Kosmos (SMuK), Munich, Germany, 2019*
- Jun. 2019 **Plan, Motivate, Achieve: Time and Self-Management**
*Transferable Skills Seminar, R. Thompson, International Helmholtz Gradu-
 ate School for Plasma Physics*
- Jun. 2019 **Presentation Skill Workshop**
*Transferable Skills Seminar, B. Hey, International Helmholtz Gradu-
 ate School for Plasma Physics*
- Jul. 2019 **The influence of impurity radiation locations on the plasma perfor-
 mance in stellarator Wendelstein 7-X**
*D. Zhang, R. Burhenn, F. Reimold, P. Hacker, [...], the W7-X Team, 46th Euro-
 pean Physical Society Conference on Plasma Physics, Milan, Italy, July 2019*
- Jul. 2019 **The bolometer diagnostic at the stellarator Wendelstein 7-X**
*P. Hacker, D. Zhang, R. Burhenn, B. Buttenschön, T. Klinger, W7-X. Team, DPG-
 Frühjahrstagung der Sektion AMOP (DPG 2018), Erlangen, Germany, March 2018*

Lectures & Classes

- Oct. 2020 **Introduction to astrophysics**
Prof. Dr. Per Helander, Max Planck Institute for Plasmaphysics, Greifswald
- Oct. 2019 **Machine Learning**
Prof. Dr. M. Stanke, Institute of Mathematics, University of Greifswald
- Oct. 2019 **Non-Neutral Plasmas & Trapped Charged Particles**
*Prof. Dr. T. Sunn Pedersen, E. Stenson, Prof. Dr. L. Schweikhard, M. Stonek-
 ing, C. Surko, Max Planck Institute for Plasmaphysics, Greifswald*