

# Application Form

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## Philipp Scholl

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# Curriculum Vitae

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## Personal Information

Name Philipp Scholl  
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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

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## 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

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## 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)

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## 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

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## 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++

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## 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 – 04/2016 **Advanced Practical Laboratory Course**  
*Advanced experimental methodology*  
Institute of Physics, University Greifswald

10/2015 – 07/2016 **Intership 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
- 10/2012 – 04/2014 **Basic Practical Laboratory Course**  
*Basic experiments in all research fields at the Institute of Physics*  
 University of Greifswald

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## Lecturing Experiences

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

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## Publications

- May 2018 **‘PIC Simulation of electronegative CCRF discharges’**  
*Authors: P. Matthias, R. Schneider, J. Meichsner, G. Bandelow, J. Duras, K. Matyash, K.-F. Lüsow, D. Kahnfeld, S. Kemnitz, L. Lewerentz and P. Hacker, doi: 10.1140/epjd/e2017-80565-y*
- Dec. 2019 **‘Measurement of edge ion temperature in W7-X with island divertor by retarding field analyzer’**  
*Authors: Y. Li, T. Henkel, Y. Liang, A. Knieps, P. Drews, C. Killer, D. Nicolai, J. Cosfeld, J. Geiger, Y. Feng, F. Effenberg, D. Zhang, P. Hacker, D. Höschen, G. Satheeswaran, S. Liu, O. Grulke, M. Jakubowski, S. Brezinsek, M. Otte, O. Neubauer, B. Schweer1, G. S. Xu, J. Cai, Z. Huang, and the W7-X Team, doi: 10.1088/1741-4326/ab3a79*
- 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*
- Feb. 2020 **‘Absence of Non-Local Electron Heat Transport in ASDEX Upgrade and Wendelstein 7-X and Modelling with the Transport Code ASTRA’**  
*Authors: K. Höfler, T. Happel, P. Hennequin, U. Höfel, F. Rytter, U. Stroth, A. Bock, P. David, S. Denk, A. Dinklage, G. Fuchert, P. Hacker, M. Hirsch, P. A. Schneider, J. Schilling, T. Stange, G. Tardini, T. Andreeva, M. Beurskens, S. Bozhnikov, K. J. Brunner, N. Chaudhary, H. Damm, U. Neuner, J. W. Oosterbeek, E. Pasch, K. Rahbarnia, H. Thomsen, M. Zanini, D. Zhang, the ASDEX Upgrade Team, the Wendelstein 7-X Team*
- Feb. 2020 **‘Large wetted areas of divertor power loads at Wendelstein 7-X’**  
*Authors: H. Niemann, P. Drewelow, M. Jakubowski, A. Puig Sitjes, B. Canas, Y. Gao, F. Pisano, R. König, R. Burhenn, P. Hacker, F. Reimold, D. Zhang, K. J. Brunner, J. Knauer, T. Sunn Pedersen, doi: 10.1088/1741-4326/ab937a*

- Sep. 2020 **'Stellarator-Tokamak Energy Confinement Comparison based on ASDEX Upgrade and Wendelstein 7-X Hydrogen Plasmas'**  
*Authors: U. Stroth, G. Fuchert, M. N.A. Beurskens, G. Birkenmeier, P. Schneider, E.R. Scott, K.J. Brunner, F. Günzkofer, P. Hacker, O. Kar-daun, J. Knauer, K. Rahbarnia, D. Zhang, doi: 0.1088/1741-4326/abbc4a*
- 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 **'2D measurements of parallel counter-streaming flows in the W7-X scrape-off layer for attached, detached plasmas'**  
*Authors: V. Perseo, V. Winters, Y. Feng, F. Reimold, O.P. Ford, R. König, S.A. Bozhentkov, K.J. Brunner, R. Burhenn, P. Drewelow, D.A. Ennis, Y. Gao, D. Gradic, P. Hacker [...]and the W7-X Team, doi: 10.1088/1741-4326/ac277a*
- 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*
- Jul. 2020 **'Large wetted areas of divertor power loads at Wendelstein 7-X'**  
*Authors: H. Niemann, P. Drewelow, M. W. Jakubowski, A. Puig Sitjes, B. Cannas, Y. Gao, F. Pisano, R. König, R. Burhenn, P. Hacker, F. Reimold, D. Zhang, K. J. Brunner, J. Knauer, T. Sunn Pedersen and the W7-X Team, doi: 10.1088/1741-4326/ab937a*

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## Research Interests

plasmaphysics, low-temperature plasmaphysics,  
 high-temperature plasmaphysics, numerical simulation, computational science,  
 diagnostics, data evaluation, machine learning, diagnostic control

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## Extra-Curricular, 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 Neuaußing – 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 P. Hacker, F. Reimold, D. Zhang, M. Krychowiak, R. Burhenn, T. Klinger: **Consistently calculating radiated power in near real time at the Wendelstein 7-X**; In *DPG-Frühjahrstagung der Sektion Materie und Kosmos (SMuK)*, Munich, Germany, 2019
- May 2019 D. Maier, A. Dinklage, J. Baldzuhn, R. Burhenn, R. Bussiahn, B. Buttenschön, P. Hacker, M. Hirsch, U. Höfel, T. Wegner, D. Zhang, the W7-X Team: **Plasma Terminating Events in Large Stellarators**; In *DPG-Frühjahrstagung der Sektion Materie und Kosmos (SMuK)*, Munich, Germany, 2019
- Jun. 2019 Transferable Skills Seminar, R. Thompson: **Plan, Motivate, Achieve: Time and Self-Management**; In *International Helmholtz Graduate School for Plasma Physics*
- Jun. 2019 Transferable Skills Seminar, B. Hey: **Presentation Skill Workshop**; In *International Helmholtz Graduate School for Plasma Physics*
- Jul. 2019 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: **The influence of impurity radiation locations on the plasma performance in stellarator Wendelstein 7-X**; In *46th European Physical Society Conference on Plasma Physics*, Milan, Italy, July 2019
- Jul. 2019 P. Hacker, D. Zhang, R. Burhenn, B. Buttenschön, T. Klinger, W7-X Team: **The bolometer diagnostic at the stellarator Wendelstein 7-X**; In *DPG-Frühjahrstagung der Sektion AMOP (DPG 2018)*, Erlangen, Germany, March 2018

### Lectures and Classes

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