# Jan Janssen

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## PROFESSIONAL APPOINTMENTS

2021 – present **Postdoctoral Research Associate**
Theoretical Division (T-1)
Los Alamos National Laboratory
Los Alamos, NM, USA

2015 – 2021 **PhD Candidate**
Computational Materials Design
Max-Planck-Institut für Eisenforschung
Düsseldorf, Germany

2017 **Invited Fellow**
Institute for Pure and Applied Mathematics
University of California
Los Angeles, CA, USA

## EDUCATION

2015 – 2021 **PhD in Theoretical Physics**, Paderborn University, Germany

2010 – 2011 **Advanced degree in Theoretical Physics (Master's equivalent)**, Technical University of Kaiserslautern, Germany

## AWARDS & HONORS

2019 Runner-up for the Heinz Billing Award of 2019

## PUBLICATIONS

2021 L.F. Zhu, **J. Janssen**, S. Ishibashi, F. Körmann, B. Grabowski and J. Neugebauer. A fully automated approach to calculate the melting temperature of elemental crystals. *Computational Materials Science*. doi:10.1016/j.commatsci.2020.110065.
- Code: pyiron/pyiron_meltingpoint

2020 T.D. Swinburne, **J. Janssen**, M. Todorova, G. Simpson, P. Plechac, M. Luskin and J. Neugebauer. Anharmonic free energy of lattice vibrations in fcc crystals from a mean field bond. *Physical Review B*. doi:10.1103/PhysRevB.102.100101.
- Code: tomswinburne/BLaSA

2019 **J. Janssen**, S. Surendralal, Y. Lysogorskiy, M. Todorova, T. Hickel, R. Drautz and J. Neugebauer. pyiron: an integrated development environment for computational materials science. *Computational Materials Science*. doi:10.1016/j.commatsci.2018.07.043.
- Code: pyiron

Y. Lysogorskiy, T. Hammerschmidt, **J. Janssen**, J. Neugebauer and R. Drautz. Transferability of interatomic potentials for molybdenum and silicon. *Modelling and Simulation in Materials Science and Engineering*. doi:10.1088/1361-651X/aafd13

2016 **J. Janssen**, N. Gunkelmann and H. M. Urbassek. Influence of C concentration on elastic moduli of $\alpha' - Fe_{1-x}C_x$ alloys. *Philosophical Magazine*. doi:10.1080/14786435.2016.1170224

### OPEN-SOURCE SOFTWARE

2015 – present **pyiron**
An integrated development environment for computational materials science
- Role: Project Lead Developer
- Code: pyiron
- Website: pyiron.org

2018 – present **Conda-Forge**
A community-led collection of recipes, build infrastructure and distributions for the conda package manager.
- Role: Maintainer for 400+ Materials Science Software Packages
- Code: conda-forge
- Website: conda-forge.org

## WORKSHOPS

2021 Workflows for Atomistic Simulation
*Max-Planck-Institut für Eisenforschung*, Düsseldorf, Germany (online).
- Code: pyiron/potentials-workshop-2021

2020 Software Tools from Atomistics to Phase Diagrams
*Max-Planck-Institut für Eisenforschung*, Düsseldorf, Germany (online).
- Code: pyiron/phasediagram-workshop-2020

## PRESENTATIONS

### INVITED TALKS

2022 **J. Janssen**. pyiron - an integrated development environment (IDE) for materials science, *Special Interest Group Data Infrastructure (SIGDIUS) Seminar*, Stuttgart, Germany (online).

2021 **J. Janssen**, T. Hickel, J. Neugebauer. pyiron - an integrated development environment for materials science, *CECAM Workshop: Simulation Workflows in Materials Modelling (SWiMM)*, Lausanne, Switzerland (online).

2020 **J. Janssen**, T. Hickel, J. Neugebauer. Uncertainty quantification for ab initio thermodynamics, *Group Seminar Professor R. Drautz*, Bochum, Germany (online).

**J. Janssen**, T. Hickel, J. Neugebauer. Automated ab-initio determination of materials properties at finite temperatures with pyiron, *NIST Workshop: Atomistic simulations for industrial needs*, Gaitgersburg, MD, USA (online).

2019 **J. Janssen**, T. Hickel, J. Neugebauer. Automated ab-initio determination of materials properties at finite temperatures with pyiron, *CLNS Seminar Los Alamos National Laboratory*, Los Alamos, NM, USA.

**J. Janssen**, T. Hickel, J. Neugebauer. pyiron - an integrated development environment for computational materials science, *Group Seminar Professor G. Kresse*, Vienna, Austria.

## TALKS AT INTERNATIONAL CONFERENCES

2019 **J. Janssen**, T. Hickel, J. Neugebauer. Automated uncertainty quantification for ab initio thermodynamics, *MRS Fall Meeting*, Boston, MA, USA.

**J. Janssen**, T. Hickel, J. Neugebauer. Automated sensitivity analysis for high-throughput ab initio calculations, *IPAM Workshop*, Los Angeles, CA, USA.

**J. Janssen**, T. Hickel, J. Neugebauer. Automated error analysis and control for ab initio calculations, *DPG Spring Meeting*, Regensburg, Germany.

**J. Janssen**, T. Hickel, J. Neugebauer. Automated sensitivity analysis for high-throughput ab initio calculations, *TMS Spring Meeting*, San Antonio, TX, USA.

2018 **J. Janssen**, T. Hickel, J. Neugebauer. Generation of ab initio datasets with predefined precision using uncertainty quantification, *DPG Spring Meeting*, Berlin, Germany.

2017 **J. Janssen**, T. Hickel, J. Neugebauer. Towards an uncertainty quantification for ab initio thermodynamics, *MRS Fall Meeting*, Boston, MA, USA.

**J. Janssen**, T. Hickel, J. Neugebauer. Sensitivity analyis for large sets of density functional theory calculations, *DPG Spring Meeting*, Dresden, Germany.

**J. Janssen**, T. Hickel, J. Neugebauer. Automated convergence and error analyses for high-precision DFT calculations, *TMS Spring Meeting*, San Diego, CA, USA.

2016 **J. Janssen**, T. Hickel, J. Neugebauer. Automated convergence checks with the python based library pyiron, *DPG Spring Meeting*, Regensburg, Germany.

**J. Janssen**, T. Hickel, J. Neugebauer. Automated convergence checks with the python based workbench pyiron, *TMS Spring Meeting*, Nashville, TN, USA.