

CURRICULUM VITAE

Dr. rer. nat. **Axel U. J. Lode**

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Personal Information

Full Name → Lode, Axel Ulrich Jürgen
Affiliation → Wolfgang Pauli Institute c/o Faculty of Mathematics
University of Vienna
Oskar-Morgenstern-Platz 1
1090, Vienna, Austria

Education

10/2002–9/2008 → Studies of physics at Heidelberg University, Germany
Thesis: Exact Dynamics of Few-Boson-Systems decaying by Tunneling through a Barrier (**Dr. Sophie Bernthsen prize** for outstanding theses)
Workgroup: Theoretical Chemistry, Heidelberg University
Supervisor: Prof. Dr. Dr. h.c. Lorenz S. Cederbaum

3/2009–6/2013 → PhD research at Heidelberg University, Germany
Thesis: Tunneling Dynamics in Open Ultracold Bosonic Systems (**Springer Thesis prize**, published in Springer Theses series)
Workgroup: Theoretical Chemistry, Heidelberg University
Supervisor: Prof. Dr. Dres. h.c. Lorenz S. Cederbaum
Date of defense: 3rd of June, 2013
Grade: Magna cum laude (Very good)

4/2012–7/2012 → Research visit with Minerva Short Term Research Grant to Haifa, Israel. Benchmarking of the MCTDHB package

Postdoctoral Research

11/2013–6/2017 → Postdoc in the Condensed Matter Theory & Quantum Computing Group, University of Basel, Switzerland
Development and applications of software for many-body dynamics of ultracold bosons (<http://ultracold.org>)
Supervision of a Masters project work and a Masters thesis

**9/2014–10/2014,
8/2015–9/2015** → Research visits to University of São Paulo, Brazil.
Lecture “A Layman’s Guide to the Multiconfigurational Time-Dependent Hartree for Bosons”.

Postdoctoral Research (continued)

- 3/2017** → Co-organization of working group “MultiConfiguration TimeDependent Hartree Boson (MCTDHB)” at the Wolfgang Pauli Institute, University of Vienna
- from 7/2017** → Postdoc at the Wolfgang Pauli Institute, University of Vienna and the Atominstitut, Technical University of Vienna.
- 11/2017** → Organization of working group “MCTDH-X: Many-body physics of interacting atoms in cavities and fermions with spin”
- 4/2018** → Organization of working group “Multiconfigurational time-dependent Hartree methods for multi-species and multi-component many-body systems”
- 5/2018** → Organization of working group “Many-body excitation spectra: Linear response of the multiconfigurational time-dependent Hartree method for indistinguishable particles”

Awards and Scholarships

- 12/2008** → Ph.D. Scholarship of the International Graduiertenkolleg 710, Complex Processes: Modeling, Simulation and Optimization
- 12/2011** → Dr. Sophie-Bernthsen award of the University of Heidelberg
- 4/2012** → Minerva Short Term Research Grant
- 6/2013–10/2013** → DAAD funded research fellows Storm E. Weiner from UC Berkeley and Tomos Wells from Imperial College, London. Research resulted in three publications
- from 6/2013** → Grant for computation time worth more than EUR 100k per year at the national german Cray supercomputer of the HLRS Stuttgart
- 08/2014** → Springer Thesis Prize

Software

- Lead developer of the MCTDH-X package <http://ultracold.org>
- Developer of the OpenMCTDHB package <http://OpenMCTDHB.uni-hd.de>
- Developer of the Heidelberg MCTDHB package <http://mctdhb.org>

Skills

- Expert knowledge of quantum many-body dynamics
- Numerical solution of physical problems
- Advanced skills in software development
- Teaching and mentoring students
- Optimization and parallelization of algorithms
- System administration

Languages

- German (first language)
- English (fluent)
- French (good)
- Russian (basic)