

# CURRICULUM VITAE

Dr. rer. nat. **Axel Lode**

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Website: <http://quantumtheory.physik.unibas.ch/people/lode/>

Software: <http://ultracold.org>



## Personal Information

- Full Name** → Lode, Axel Ulrich Jürgen  
**Date of Birth** → February 11, 1982  
**Place of Birth** → Villingen-Schwenningen  
**Nationality** → German  
**Affiliation** → Condensed Matter Theory & Quantum Computing Group  
Department of Physics, University of Basel  
Klingelbergstrasse 82  
3056 Basel, Switzerland

## Education

- 10/2002–9/2008** → Diploma in physics at Heidelberg University, Germany  
Thesis: Exact Dynamics of Few-Boson-Systems decaying by Tunneling through a Barrier  
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  
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

- 6/2013–11/2013** → Postdoc in the Theoretical Chemistry Group, Heidelberg University  
Supervision of two DAAD-RISE research students from UC Berkeley, CA, USA and Imperial College London, GB. Research resulted in three publications

## Postdoctoral Research (continued)

- since 11/2013** → 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>)  
Research focus on new theoretical approach for the dynamics of bosons in large one-, two- or three-dimensional lattices
- 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”.

## 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-RISE interns from UC Berkeley and from Imperial College, London
- 08/2014** → Springer Thesis Prize

## Software

- Head 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)