

David Wellnitz | Curriculum Vitae

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Education

CNRS Strasbourg

Ph.D. in Physics

Novel numerical approaches to quantum many-body dynamics in molecular complexes

Strasbourg
Since Nov 2018

Heidelberg University

Research Assistant

Heidelberg
Oct 2018

Heidelberg University

Physics master, grade: 1.0

Heidelberg
2016–2018

Heidelberg University

Physics bachelor, grade: 1.0

Heidelberg
2013–2016

Johanneum

Gymnasium, Abitur: 1.0

Wadersloh
2005–2013

Schmeddingschule

Elementary School

Langenberg
2001–2005

Master's Thesis

Title: *A Network Approach to Atomic Spectra*

Supervisor: Professor Matthias Weidemüller

Summary: This thesis explores a novel approach to analyze atomic spectra with the means of network theory. We develop a mapping from spectra to networks and employ methods from network science to find structure in the states and predict transitions. These methods are benchmarked on well understood atoms, and provide new insights into more complex spectra, such as that of thorium.

Bachelor's Thesis

Title: *The Effect of Tidal Shear on the Shape of Galaxies*

Supervisor: Professor Björn Malte Schäfer

Summary: This thesis analyzes the effect of the gravitational tidal shear field on the shape of galaxies up to 2nd order.

Teaching

Heidelberg University

Research assistant

Tutor for 3rd semester lecture: Theoretical Electrodynamics

2016–2017

Conferences and Publications

Conferences.....

- 2018/03: DPG Spring Meeting in Erlangen
Seminar talk: **Spectroscopic Networks**
- 2017/12: CQD Colloquium Poster Session
Poster: **A Network Approach to Atomic Spectra**
- 2017/09: Mediterranean School of Complex Networks
- 2015/07: Lindau Nobel Laureate Meeting

Publications.....

David Wellnitz, Armin Kekić, Julian Heiss, Michael Gertz, Andreas Spitz, and Matthias Weidemüller. In preparation. **A Network Approach to Atomic Spectra.**

Extracurricular Activities

Projects.....

- 2011–2012: Assembling of a scanning tunneling microscope
- 2011/03: International Masterclasses: Hands on Particle Physics
- 2011/02: Euregio Project: Energy: Then, Now and in the Future

Miscellaneous.....

- 2014: *Talent Take Off: Durchstarten*, Fraunhofer Institut
- 2010: Course on quantum physics for high school students

Awards

- 2016–now: *Deutschlandstipendium* (Germany scholarship)
- 2013: Abitur award of the *DPG* (German Physics Association) and the *DMV* (German Math Association)
- 2013: *Bundeswettbewerb Mathematik*: 1st prize in 1st round
2nd prize in 2nd round
- 2012: Mathematics Olympiad: 1st prize in school – and regional round

Computer Skills

Basic: L^AT_EX, C++

Intermediate: PYTHON

Languages

German: Mothertongue

English: C1 (ELCR)

French: B1/B2 (ELCR)

Latin: Latinum (*advanced proficiency certificate*)