

CURRICULUM VITAE

Birgitta Bernhardt

Full name: Birgitta Catarina Schultze-Bernhardt
married, three children, b. 2014, 2017 & 2021

INSTITUTIONAL ADDRESS

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EDUCATION AND RESEARCH EXPERIENCE

10/2022 – present University professor
at Graz University of Technology, Austria

04/2021 – 09/2022 Associate professor
at Graz University of Technology, Austria

03/2021 Habilitation, *Venia Docendi* in Experimental Physics
Thesis title: *Laser spectroscopy with extreme resolution*

11/2020 – 03/2021 Assistant professor
at Graz University of Technology, Austria

2019 – 10/2020 Senior scientist (permanent)
at Graz University of Technology, Austria

2017–2019 Junior Professor (W1, fixed-term)
at the Friedrich-Schiller-Universität Jena, Germany

2015 – 2017 Alexander-von-Humboldt research fellow and postdoctoral scholar
Chair for laser and X-ray physics
Prof. Reinhard Kienberger, Technische Universität München, Germany

2012 – 2014 Alexander-von-Humboldt research fellow and postdoctoral scholar
Joint attosecond project of Profs. S.R. Leone and D. M. Neumark
Lawrence Berkeley National Laboratory, Berkeley, California, USA

2011 – 2012 Postdoctoral researcher with Prof. Theodor W. Hänsch
Max-Planck-Institut für Quantenoptik, Garching, Germany

07/2011 Dr. rer. nat. (Ph.D.) in physics
Thesis title: *Dual Comb Spectroscopy*
Supervisor: Prof. Theodor W. Hänsch (Nobel Prize in Physics 2005)
Max-Planck-Institut für Quantenoptik, Garching, and
Ludwig-Maximilians-Universität, München, Germany

07/2006 Diploma in physics
Thesis title: *Implementation and characterization of a stable optical
frequency distribution system*
Supervisor: Prof. Theodor W. Hänsch
Max-Planck-Institut für Quantenoptik, Garching, and
Ludwig-Maximilians-Universität, München, Germany

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FELLOWSHIPS, AWARDS & MEMBERSHIPS

- Since May 2023 Member of the Directory Board, Junge Akademie, *Österreichische Akademie der Wissenschaften*
- Since May 2021 Member, Junge Akademie, *Österreichische Akademie der Wissenschaften*
- 08/2020 ERC Starting Grant 2020
- 07/2020 FWF START Prize 2020
- 03/2018 – 02/2021 *Daimler und Benz* postdoctoral fellowship
- 06/2017 – 05/2019 *Carl Zeiss Foundation* endowed professorship
- 06/2016 Fellowship of the *Fellows of the Wilhelm und Else Heraeus Foundation, 66th Lindau Nobel Laureate Meeting* in Lindau, Germany
- 01/2015 – 12/2015 Feodor Lynen return fellowship, *Alexander-von-Humboldt Foundation*
- 05/2013 – 09/2014 Feodor Lynen fellowship for postdoctoral researchers, *Alexander-von-Humboldt Foundation*

MAIN RESEARCH INTERESTS

- Coherent Sensing
- Frequency Combs
- Dual Comb Spectroscopy
- Cavity enhanced Spectroscopy
- High Harmonic Generation
- Time-resolved Spectroscopy
- Transient Absorption
- Ion Spectroscopy

SELECTED PUBLICATIONS

1. V. Schuster, Ch. Liu, R. Klas, J. Rothhardt, J. Limpert and B. Bernhardt, *Ultraviolet Dual Comb Spectroscopy: A Roadmap*, Optics Express 29 (14), 21859-21875 (2021)
2. V. Schuster, V. Hilbert, R. Klas, Ch. Liu, M. Tschernajew, B. Bernhardt, J. Rothhardt and J. Limpert, *Agile spectral tuning of high order harmonics by interference of two driving pulses*, Optics Express 29 (14), 22117-22126 (2021)
3. K. Hütten, M. Mittermair, S. Stock, R. Beerwerth, V. Shirvanyan, J. Riemensberger, A. Duensing, R. Heider, M. Wagner, A. Guggenmos, S. Fritzsche, N. M. Kabachnik, R. Kienberger and B. Bernhardt, *Ultrafast Quantum Control of Ionization Dynamics in Krypton*, Nature Communications 9, 719 (2018)
Among the TOP 50 of the most read physics articles in 2018
4. X. Li, B. Bernhardt, A. R. Beck, E. R. Warrick, Adrian N. Pfeiffer, M. J. Bell, D. J. Haxton, C. W. McCurdy, D. M. Neumark and S. R. Leone, *Investigation of coupling mechanisms in attosecond transient absorption of auto-ionizing states: comparison of theory and experiment in xenon*, J. Phys. B: At. Mol. Opt. Phys. 48, 125601 (2015)
5. B. Bernhardt, A. R. Beck, X. Li, E. R. Warrick, M. J. Bell, D. J. Haxton, C. W. McCurdy, D. M. Neumark and S. R. Leone, *High-spectral-resolution attosecond absorption spectroscopy of autoionization in xenon*, Physical Review A 89, 023408 (2014)
6. A. R. Beck, B. Bernhardt, E. R. Warrick, M. Wu, S. Chen, M. B. Gaarde, K. Schafer, D. M. Neumark and S. R. Leone, *Attosecond transient absorption probing of electronic superpositions of bound states in neon: detection of quantum beats*, New J. Phys. 16, 113016 (2014),
7. T. Ideguchi, S. Holzner, B. Bernhardt, G. Guelachvili, N. Picqué and T. W. Hänsch, *Coherent Raman spectro-imaging with laser frequency combs*, Nature 502, 355 (2013)
8. B. Bernhardt, A. Ozawa, A. Vernaleken, I. Pupeza, J. Kaster, Y. Kobayashi, R. Holzwarth E. Fill, F. Krausz, T. W. Hänsch, and Th. Udem, *Vacuum ultraviolet frequency combs generated by a femtosecond enhancement cavity in the visible*, Optics Letters 4, 503 (2012)
9. B. Bernhardt, A. Ozawa, P. Jacquet, M. Jacquy, Y., T. Udem, R. Holzwarth, G. Guelachvili, T. W. Hänsch and N. Picqué, *Cavity-enhanced dual comb spectroscopy*, Nature Photonics 4, 55-57 (2010)
10. B. Bernhardt, E. Sorokin, P. Jacquet, R. Thon, T. Becker, I. T. Sorokina, N. Picqué and T. W. Hänsch *Mid-infrared dual-comb spectroscopy with 2.4 μm $\text{Cr}^{2+}:\text{ZnSe}$ femtosecond lasers*, Applied Physics B - Lasers and Optics 100, 3 - 8 (2010)