

C u r r i c u l u m V i t a e

Name: Prof. Dr. Dagmar Bruß

Address:

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Research field: Quantum Information Theory (Entanglement Theory, Quantum Cryptography, Quantum Repeaters, Quantum Correlations, Bell Inequalities, Quantum Cloning and State Estimation, Graph States and Hypergraph States, Quantum Error Correction, Quantum Networks)

Academic CV:

Diplom:	1989, RWTH Aachen, Germany, Theor. Particle Physics (Prof. L.M. Sehgal)
Master of Science:	1990, University of Edinburgh, Great Britain, Astronomical Technology
PhD Thesis:	1994, Univ. of Heidelberg, Germany, Theor. Particle Physics (Prof. O. Nachtmann)
Postdoc:	1995, Univ. of Heidelberg, Germany, Theoretical Particle Physics
Postdoc:	1996, University of Oxford, UK, Quantum Optics (Prof. P. Sandars)
	1997, University of Oxford, UK, Quantum Inf. Theory (Prof. A. Ekert)
Postdoc:	1998, Inst. Sc. Interchange, Torino, Italy, Quantum Inf. Theory (Prof. M. Rasetti)
Postdoc/Research Ass.:	1999-2004, Univ. of Hannover, Germany, Qu. Inf. Theory (Prof. M. Lewenstein)
Habilitation:	2002, Univ. of Hannover, Germany, Quantum Information Theory
Professorship:	2004-, Full Prof. (C4), Univ. of Düsseldorf, Germany, Theoretical Physics

Grants, Honours, Committees:

1986-90: Grant by German National Academic Foundation (Studienstiftung des dt. Volkes)
1996-97: European Research Fellowship, Oxford, UK
1998: European Research Fellowship, Torino, Italy
2005-09: Selection Committee for Gustav-Hertz-Prize of DPG (German Physical Society)
2013-17: PhD Selection Committee for the German National Academic Foundation
2014-18: Scientific Advisory Board of “Welt der Physik”
2016-: Scientific Advisory Board of “Doctoral Programme ALM” (Innsbruck, Austria)
2016-18: Chair of DPG Division Q (Quantum Optics and Photonics)
2017- : Advisory Board for “Pauli Center for Theoretical Studies” (ETH Zürich, Switzerland)
2018- : Editorial Advisory Board for Journal “Advanced Quantum Technologies” (Wiley-VCH, Weinheim, Germany)
2018-21: Selection Committee for Robert-Wichard-Pohl-Prize of the DPG
2018- : Programme Committee “Quantum systems”, BMBF (Federal Ministry of Education and Research), Germany

Scientific publications:

Selected publications:

”Optimal eavesdropping in quantum cryptography with six states”, DB, PRL 81, 3018 (1998);

”Multipartite entanglement detection via structure factors”,

P. Krammer *et al*, Phys. Rev. Lett. 103, 100502 (2009);

”Linking Quantum Discord to Entanglement in a Measurement”,

A. Streltsov, H. Kampermann, and DB, Phys. Rev. Lett. 106, 160401 (2011).

”Complementarity and Correlations”,

L. Maccone, DB, and C. Macchiavello, Phys. Rev. Lett. 114, 130401 (2015).

”Device-Independent Bounds on Detection Efficiency”,

J. Szangolies, H. Kampermann, and DB, Phys. Rev. Lett. 118, 260401 (2017).

Publications in total:

134 publications in international refereed journals (out of which 18 with more than 100 citations), 9 book contributions, 2 books.

Invited Talks and Lectures:

Selected talks/lectures:

APS March Meeting (New Orleans, US, 2008), ICQFT’09 (Shanghai, China, 2009), Les Houches Summer School (Singapore, 2009), AQIS’10 (Tokyo, Japan, 2010), NRW Akademie der Wiss. und Künste (Düsseldorf, 2012), CEWQO 2013 (Stockholm, Sweden, 2013), Quantum [Un]Speakables II: 50 Years of Bell’s Theorem (Vienna, Austria, 2014), AQIS’15 (Seoul, Korea, 2015), LPHYS’16 (Yerevan, Armenia, 2016), KCIK (Sopot, Poland, 2017), ISNFQC18 (Kolkata, India, 2018).

Talks in total: ca 140 invited talks at international conferences and colloquia, 15 invited lectures at international summer schools.

Editorial Service:

since 2003: Editorial Board Member of *IJQI* (World Scientific)

2006 - 2011: Editorial Board Member of *J. Phys. A: Math. Theor.* (IOP Publishing)

2006 - 2012: Divisional Associate Editor (DAE) of *Phys. Rev. Lett.* (APS Journals)

Referee Service:

For 19 different international journals (including Nature Physics, Nature Photonics, Phys. Rev. Lett., Phys. Rev. A) and for several funding organisations (including European Commission, DFG, Humboldt Foundation, Volkswagen Foundation). Award *Outstanding Referee* (APS, 2014).

Funding:

EU-Funding: Member of network QUPRODIS (IST-Programme), member of 6th Framework IP’s SECOQC (2004-2008) and SCALA (2007-2010), member of ITN (Horizon 2020) network QCALL (2017-2020).

Funding of the German Research Foundation (DFG): Programme QIV (2001-2003); Project *Identification of quantum states with witness operators* (2008- 2011); Project *Collective detection of multipartite entanglement* (2010-2013); Excellence Cluster ML4Q (*Matter and Light for quantum computing*, Universities Aachen/Bonn/Cologne, 2019-2024).

Funding of BMBF: Network QuOREP (*Quantum Optical Repeater Platforms*, 2010-2013), Q.com-Q (*Quantenkommunikation*, 2014-2017), HQS (*Hardware based quantum security*, 2017-2019), Q.Link.X (*Quanten-Link-Erweiterung*, 2018-2021).