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Publication record

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Bibliometric profiles

[Researcher ID C-4196-2008](https://orcid.org/0000-0003-1876-3615)
[Google Scholar](https://scholar.google.com/citations?user=...)

Aug 2016 - present
Nanjing University, China

Qualifications

PhD in Physics	University of Strathclyde	4 Jul 07
	(Date of viva)	20 Jan 07
Diplom in Physik	Technische Universität Berlin	23 Sep 03
BSc(Hons) in Mathematics & Physics	University of Strathclyde	8 Jul 01

Profile

My field of research is the spatial structure of light, and its importance in classical and quantum optics. This includes the use of light in photonic materials as a resource for quantum technologies as well as quantum information in high-dimensional Hilbert spaces, and the detailed analysis of optical scattering processes in terms of the phase and polarization structure of the light.

Scientific achievements

Chiral Rotational Spectroscopy

Shifting the rotational levels of a molecule using circular polarised light allows for the determination of individual, orientated components of the optical activity polarizability tensor, in a manner which reveals the enantiomeric constitution while giving an incisive signal even for a racemate [see publications J26 and P9, UK patent application GB 1519681.9 and PCT application PCT/EP2016/076742]

Singularimetry

Upon reflection or transmission any higher order vortex beam undergoes a change in its topological structure: the high charge vortex splits up into a "constellation" of unit charge vortices. My work shows that determining the position of the vortices in a constellation reveals detailed information about the scatterer, a technique I have termed 'singularimetry' [see publications J14 & P5].

Fractional orbital angular momentum of light

Fractional orbital angular momentum states test effectively a multi-dimensional subset of the Hilbert space for orbital angular momentum, which is why they are of fundamental interest in high-dimensional quantum information processing. My research provided a method to generate these states in a way which optimises their stability on propagation [see publications J5 & J7].

Professional Experience

Associate Professor

I have joined the College of Engineering and Applied Sciences as the first foreign faculty member and I am supported by the Young 1000 Talent programme from the Chinese government. In addition to research and teaching my duties include building up the international presence of Nanjing University in general and my department in particular.

Dec 2015 - Aug 2016

University of Glasgow, UK

Visiting & Honorary Research Fellow

During this time I was supported by the UK technology hub QuantIC and working on the implementation and commercialisation of a new spectrometer for the analysis of chiral molecules based on a chirality sensitive shift of the rotational energy levels. This method gives an incisive signal even for a racemate and allows for the determination of elusive forms of chirality such as chirality due to isotopic substitution. This is an ongoing collaboration with the Quantum Theory group of the University of Glasgow, of which I continue to be an honorary research fellow.

Oct 2011 - Nov 2015

MPI-PKS Dresden, Germany

Guest Scientist & Newton Alumnus

I led a small group working on topological aspects in light-matter interaction, which includes the exchange of orbital angular momentum between light and atoms or molecules, as well as the interaction of spatially structured electron beams with high-intense laser fields. I was also the manager for the local branch of the European funded STREP consortium QuILMI [nottingham.ac.uk/quilmi] on an integrated optical atom chip for quantum information processing.

Oct 2009 - Sep 2011

University of Bristol, UK

Newton Fellow - Displacing light with surface metamaterials

A personal grant, the Newton International Fellowship, was awarded to me to investigate the changes in the spatial structure of light beams upon reflection from interfaces. I also collaborated with researchers from the centre for Nanoscience and Quantum Optics at the University of Bristol on the detection of nano-particles.

Oct 2007 - Sep 2009

Leiden University, Netherlands

Postdoctoral fellow - Spatial shifts in the reflection of light

My research focussed on small deviations of the laws of reflection which occur on reflection at real interfaces - including structured surfaces. I also studied the effects of localized surface waves on reflection resonances.

Jun 2007 - Sep 2007

University of Glasgow, UK

Research Assistant - Singular optics and optical vortices

At the core of my research was the study of optical vortices in light beams and how such light beams can be made more structurally stable on propagation. These light beams find applications in classical and quantum communication.

Dec 2006 - May 2007

University of Strathclyde, UK

Research Assistant - Image transmission in moving media

During my research I examined the properties of angular momentum of light in a dielectric medium in the context of the Abraham-Minkowski dilemma. In particular, I studied the consequences of a moving medium, and how images are transmitted through a rotating glass bar.

Oct 2003 - Nov 2006

University of Strathclyde, UK

PhD student - Integral and Fractional Orbital Angular Momentum of Light

My PhD research covered the subtle quantum mechanical properties of angle and orbital angular momentum as a conjugate pair of variables, and their entanglement properties in an optical realisation.

Patents

6 Nov 2015

GB 1519681.9

6 Nov 2016

PCT/EP2016/076742

Method of analysing molecular properties and spectrometer for the same

The invention presents a spectroscopic technique for probing rotational transitions of molecules that is capable of yielding incisive and orientated information about their chirality even for a racemic sample. It is particularly

suited for the analysis of molecules that are chiral by virtue of an isotopic substitution and for molecules with multiple chiral centres.

Grants & Awards

2017	Young 1000 Talent Programme	¥2,000,000
2016	Nanjing University Start-up funding	¥2,000,000
2015	Newton Alumnus Funding	£6,000
2014	Newton Alumnus Funding	£6,000
2013	Newton Alumnus Funding	£6,000
2013	MPI-PKS Workshop grant	€10,000
2012	Newton Alumnus Funding	£6,000
2011	Newton Alumnus Funding	£5,568
2011	Lorentz Center - Workshop Grant	€9,545
2011	Leids Universiteit Fonds - Workshop Grant	€1,500
2011	Newton International Fellowship	£101,000

Professional Activities

Project management

2013 - 2016 *QuILMI Consortium*

I was the manager for the MPI-PKS work package of the consortium. My responsibilities included the preparation and presentation of reports, as well as liaising with the financial administrators in Dresden and the overall project coordination in Nottingham.

2009- 2015 *Newton International Fellowship & Alumni funding*

As grant holder I had responsibility over a personal research budget. This includes the planning of collaborative activities and the writing of annual reports to the Royal Society justifying both scientific progress and financial accounts.

Organisation of conferences, workshops & seminars

from 2018 *Photonics West*

Complex Light and Optical Forces

Beginning with next year's conference I have accepted and offer to act as conference chair of this conference held annually as part of Photonics West in San Francisco.

<https://spie.org/PWO/conferencedetails/complex-light-and-optical-forces>

Mar 2015 *Symposium at DPG Frühjahrstagung*

Interactions between twisted light and particles

The aim of this small, joint symposium of the optical and atomic division of the DPG during the meeting in Heidelberg was to explore the connections across quantum and electron optics as well as atomic physics in the field of angular momentum of localised fields.

<http://heidelberg15.dpg-tagungen.de/programm/symp.html>

Mar 2011 MPI-PKS Workshop*Spin-orbit coupling for light and matter waves*

This workshop with over 60 participants highlighted the importance of spin-orbit coupling as a universal wave phenomenon with applications to topical areas of research.

<http://www.mpipks-dresden.mpg.de/~soilm13>

Mar 2011 Lorentz Workshop*Beam shifts: Analogies between light and matter waves*

This workshop with about 40 participants established analogies for beam shift effects across optics, condensed matter and particle physics through a series of talks and structured discussions.

<http://www.lorentzcenter.nl/lc/web/2011/436/info.php3?wsid=436>

Apr 2010 - Mar 2011 Coordinator of Theory Seminar

During this period I acted as one of the organisers for the seminar of the Theory Group at the University of Bristol. My responsibilities included the selection of suitable speakers and arranging their interaction with resident researchers.

Programme committee

Jul 2014 - Feb 2017 Programme committee for SPIE conference

Since February 2014 I am serving on the programme committee for the SPIE conference Complex Light and Optical Forces, part of SPIE Photonics West OPTO.

Editor / Guest Editor

from Apr 2017 Journal of Physics Communications

As of this April I serve on the editorial board of this newly launched open access journal.

2013 Journal of Optics special issue on "Beam shifts"

I was the principal guest editor for a special issue on beam shift phenomena for the Journal of Optics with over 20 contributions.

Referee for scientific journals

- ▶ Nature Publishing Group [Nature Communications, Scientific Reports]
- ▶ AIP Journals [Journal of Mathematical Physics]
- ▶ OSA Journals [Optica, Optics Express, Optics Letters, Journal of the Optical Society of America A]
- ▶ IOP Journals [New Journal of Physics, European Physics Letters, Journal of Physics A & B, Journal of Optics]

Advisor to postdoctoral researchers

Jun 2014 - Dec 2016 Armen Hayrapetyan

Supervisor for PhD students

Sep 2014 - present Koen Corstiaan van Kruining "Topology in light matter interaction"

Teaching experience

- May 2017** **Structured light and how to generate it**
Nanjing University, China
During a joint summer camp between Ohio State University and Nanjing University, I have given an introductory lecture on structured light to engineering student from China and the US.
- Apr 2017** **Helicity, chirality and the angular momentum of particles and waves**
Nanjing University, China
As part of my start at Nanjing University I gave a lecture to present my field of work to undergraduate students in English. The aim is to establish a comprehensive English language curriculum at Nanjing University.
- Sep 2012** **Transport in Nanostructures**
TU Ilmenau, Germany
I taught students taking a course in photovoltaics the fundamentals of electron transport in nanostructures over two days with 6 hours of teaching on each day. The syllabus covered the simple Drude and Sommerfeld theories, the Boltzmann equations and the fluctuation-dissipation theorem.
- Academic years** **Tutor: Extra unit for highly qualified overseas students**
2009/2010
2010/2011
University of Bristol, UK
During my time in Bristol I co-designed an extra unit for highly qualified overseas student who took a foundation year before the start of their main course. The normal unit was primarily designed as an elective class for non-physics students and did not pose any challenges for the overseas students, which is why this extra unit with additional credits was designed. The coursework consisted of projects on integrated problems requiring the students to read up on more advanced mathematics. The students were assessed on the bases of weekly exercise sheets and a short presentation for each project. It was my responsibility to design the module and the projects, mark the homework exercises and examine the presentation of the students.
This unit provided challenges for me as a teacher on several levels: bridging language difficulties, motivating the students to perform well in a unfamiliar form of assessment, guiding the students through the projects and finding the right level of difficulty to keep the students interested.
- Summer terms** **Postgraduate Tutor: Foundation Physics**
2004 & 2005
University of Strathclyde, UK
As a PhD student I gave tutorial in elective classes on foundation physics. A particular challenge in these classes lay on the widely varying background and interests of the students.
- Academic years** **Undergraduate Tutor: Theoretical Physics & Physics for Engineers**
1999/2000
2001/2002
2002/2003
TU Berlin, Germany
During my undergraduate studies I held tutorials for Theoretical Physics and Physics for Engineers for a total of 3 years. I covered the 1st and 2nd year classes on Introduction into Theoretical Physics as well as Analytical Mechanics. My responsibilities were to design the tutorial, mark homework exercises and be the first point of contact for the students. During this time I actively participated in a pilot project to increase the student's ability to solve problems independently with minimal guidance by the tutor. As part of this project it was my responsibility to design small projects on which the students would work during the year. At the end of the year a presentation on the work would be assessed by me, the lecturer and a postgraduate teaching assistant and formed part of the overall mark for the class.

Professional Affiliations

Submitted manuscripts

- ▶ Member of the Deutsche Physikalische Gesellschaft
- ▶ Member of the Optical Society of America
- ▶ Member of the Institute of Physics

Publications

Accepted manuscripts

- [S1] A G Hayrapetyan, S P Klevanksy and **J B Götte**. *Instantaneous amplitude and angular frequency modulation of light in time-dependent PT-symmetric optical potentials.* • submitted to *New J. Phys.* (June 2016)

Journal papers

- [S2] D Jukić, T Pohl and **J B Götte**. *Trapping Atoms in evanescent fields of laser written waveguides.* • submitted to *New J. Phys.* (November 2016)

- [A1] K van Kruining, A G Hayrapetyan and **J B Götte**. *Nonuniform currents and spins of relativistic electron vortices in a magnetic field.* • accepted for publication in *Phys. Rev. Lett.* (June 2017)

- [J28] R P Cameron, **J B Götte**, S M Barnett and A M Yao. *Chirality and the angular momentum of light.* • *Phil. Trans. R. Soc. A* **375** 20150433 (2017)

J. Opt. Labtalk

- [J27] R P Cameron, **J B Götte** and S M Barnett. *Chiral Rotational Spectroscopy.* • *Phys. Rev. A* **94** 032505 (2016)

- [J26] R P Cameron, **J B Götte**, S M Barnett and J P Cotter. *Matter-wave grating distinguishing conservative and dissipative interactions.* • *Phys. Rev. A* **94**, 013604 (2016)

- [J25] K van Kruining and **J B Götte**. *The conditions for the preservation of duality symmetry in a linear medium.* • *J. Opt.* **18** 085601 (2016)

- [J24] A G Hayrapetyan, **J B Götte**, K K Grigoryan, S Fritzsche and R G Petrosyan. *Electromagnetic wave propagation in spatially homogeneous yet smoothly time-varying dielectric media.* • *J. Quant. Spectrosc. Radiat. Transfer* **178**, 158 (2016)

- [J23] L B Ma, S L Li, V M Fomin, **J B Götte**, M Hentschel, Y Yin, M R Jorgensen and O G Schmidt. *Spin-orbit coupling of light in asymmetric microcavities* • *Nat. Comm.* **7**, 10983 (2016)

- [J22] N Radwell, R Hawley, **J B Götte** and S Franke-Arnold, *Achromatic vector vortex beams from a glass cone.* • *Nat. Comm.* **7**, 10564 (2016)

- [J21] K K Grigoryan, A G Hayrapetyan, **J B Götte** and R G Petrosyan. *Kapitza-Dirac effect with traveling light waves.* • *New J. Phys.* **17**, 082002 (2015)

- [J20] **J B Götte**, W Löffler and M R Dennis. *Eigenpolarizations for giant transverse optical beam shifts* • *Phys. Rev. Lett.* **112**, 233901 (2014)

J. Opt. Highlight of 2013

- [J19] R Kammel, R Ackermann, J Thomas, **J Götte**, S Skupin, A Tünnermann and S Nolte. *Enhancing precision in fs-laser material processing by simultaneous spatial and temporal focusing.* • *Light: Sci. & App.* **3**, e169 (2014)

J. Opt. Highlight of 2013

- [J18] **J B Götte**, and M R Dennis. *“Limits to superweak amplification for beam shifts”* • *Opt. Lett.* **38**, 2295 (2013)

- [J17] M R Dennis and **J B Götte**. *Beam shifts for pairs of plane waves.* • *J. Opt.* **15**, 014015 (2013)

Journal papers
(continued)

- [J16] **J B Götte**, S Shinohara and M Hentschel. *Are Fresnel filtering and the angular Goos-Hänchen shift the same?* • *J. Opt.* **15**, 014009 (2013)
- [J16] M R Dennis and **J B Götte**. *Topological aberration of optical vortex beams: Determining dielectric interfaces by optical singularity shifts.* • *Phys. Rev. Lett.* **109**, 183903 (2012)
- [J14] **J B Götte** and M R Dennis. *Generalized shifts and weak values for polarization components of reflected light beams.* • *New J. Phys.* **14**, 073016 (2012)
- [J13] M R Dennis and **J B Götte**. *The analogy between optical beam shifts and quantum weak measurements.* • *New J. Phys.* **14**, 073013 (2012)
- [J12] M R Dennis, **J B Götte**, R P King, M A Morgan and M A Alonso. *Paraxial and nonparaxial polynomial beams and the analytic approach to propagation.* • *Opt. Lett.* **36**, 4452 (2011)
- [J11] X Hong, E M P H van Dijk, S R Hall, **J B Götte**, N F van Hulst and H Gersen. *Background-Free Detection of Single 5 nm Nanoparticles through Interferometric Cross-Polarization Microscopy.* • *Nanoletters* **11**, 541 (2011)
- [J10] M Merano, **J B Götte**, A Aiello, M van Exter and J P Woerdman. *Goos-Hänchen shift for a rough metallic mirror.* • *Opt. Exp.* **17**, 10864 (2009)
- [J9] J Leach, A Wright, **J B Götte**, J M Girkin, L Allen, S Franke-Arnold, S M Barnett and M Padgett. *'Aether Drag' and Moving Images.* • *Phys. Rev. Lett.* **100**, 153902 (2008)
- [J8] **J B Götte**, A Aiello and J P Woerdman. *Loss-induced transition in the Goos-Hänchen effect for metals and dielectrics.* • *Opt. Exp.* **16**, 3961 (2008)
- [J7] **J B Götte**, K O'Holleran, D Preece, F Flossmann, S Franke Arnold, S M Barnett and M Padgett. *Light beams with fractional orbital angular momentum and their vortex structure.* • *Opt. Exp.* **16**, 993 (2008)
- [J6] **J B Götte**, S M Barnett and M Padgett. *On the dragging of light by a rotating medium.* • *Proc. R. Soc. Lond. A* **463**, 2185 (2007)
- [J5] **J B Götte**, S Franke-Arnold, R Zambrini and S M Barnett. *Quantum Formulation of Fractional Orbital Angular Momentum.* • *J. Mod. Opt.* **54**, 1723 (2007)
- [J4] **J B Götte**, P Radmore, R Zambrini and S M Barnett. *Angular minimum uncertainty states with large uncertainties.* • *J. Phys. B* **39**, 2791 (2006)
- [J3] **J B Götte**, S Franke-Arnold and S M Barnett. *Angular EPR paradox.* • *J. Mod. Opt.* **53**, 627 (2006)
- [J2] **J B Götte**, S Franke-Arnold, R Zambrini and S M Barnett. *Large-uncertainty intelligent states for angular momentum and angle.* • *J. Opt. B* **7** (12), S563 (2005)
- [J1] A Zeiser, N Bücking, **J B Götte**, J Förstner, P Hahn, WG Schmidt and A Knorr. *Dynamics of the phonon induced electron transfer between semiconductor bulk and surface states.* • *Phys. stat. sol. B* **241**, R57 (2004)

- Proceedings papers**
- [P9] **J B Götte**, R P Cameron and S M Barnett. *Orientated molecular information from chiral rotational spectroscopy.*
• Proceedings of SPIE **10120-0N** (2017)
- [P8] D Jukić, T Pohl and **J B Götte**. *Evanescent fields of laser written waveguides.*
• Proceedings of SPIE **9379-0R** (2015)
- [P7] M R Dennis and **J B Götte**. *Beam shifts to reflected light beams and their axial structure.*
• Proceedings of SPIE **9441-0M** (2014)
- [P6] **J B Götte**. *Weak measurements with non-integer orbital angular momentum states.*
• Proceedings of SPIE **8999-0Z** (2014)
- [P5] **J B Götte** and M R Dennis. *Spin-orbit interaction in vortex singularimetry.*
• Proceedings of SPIE **8813-34** (2013)
- [P4] **J B Götte** and M R Dennis. *Probing quantum cores of optical vortices with atoms.*
• Proceedings of SPIE **7950-28** (2011)
- [P3] M R Dennis and **J B Götte**. *Scalar Goos-Hänchen shift for Robin boundary conditions.*
• Proceedings of SPIE **7950-17** (2011)
- [P2] M Padgett, J Leach, S Franke-Arnold, **J B Götte**, L Allen, A Wright, J Girkin and S M Barnett. *The lateral displacement of a moving image on transmission through a stationary glass window.*
• Proceedings of SPIE **6664-0D** (2007)
- [P1] **J B Götte**, S Franke-Arnold and S M Barnett. *Angular EPR paradox.*
• AIP Conference Proceedings **734**, 273 (2004)
- Book chapters**
- [B2] **J B Götte** and S M Barnett. *Light beams carrying orbital angular momentum* in “The Angular Momentum of Light” (D L Andrews and M E Babiker eds.)
• Cambridge University Press (2012)
- [B1] **J B Götte** and S M Barnett. *Quantum formulation of angle and orbital angular momentum* in “The Angular Momentum of Light” (D L Andrews and M E Babiker eds.)
• Cambridge University Press (2012)
- Theses**
- [T2] **J B Götte**. *Integral and Fractional Orbital Angular Momentum of Light.* PhD thesis, University of Strathclyde, Glasgow, UK, 2007. (Supervisors: S M Barnett and S Franke-Arnold, Examiner: M E Babiker).
- [T1] **J B Götte**. *Optical Bloch equations for semiconductor surfaces: Ultra-short time dynamics and photo electron emission.* Diplomarbeit, Technische Universität Berlin, Germany, 2003. (Supervisor: A Knorr, Examiner: M Scheffler).
- Other publications**
- [O6] **J B Götte**, M Hentschel and W Löffler. *Beyond catoptrics.* Editorial for special issue of the Journal of Optics on “Beam shifts”.
• J. Opt. **15**, 010301 (2013)
- [O5] **J B Götte**. Book review on “Principles of Nano Optics” by Lukas Novotny and Bert Hecht.
• Cont. Phys. **54**, 123 (2013)
- [O4] **J B Götte**. Book review on “Analytical Mechanics for Relativity and Quantum Mechanics” by Oliver Davis Johns.
• Cont. Phys. **53**, 385 (2012)
- [O3] **J B Götte**. Book review on “Quantum Mechanics and Quantum Field Theory: A Mathematical Primer” by Jonathan Dimock.
• Cont. Phys. **52**, 628 (2011)

- Other publications** (continued)
- [O2] **J B Götte**. Book review on “*Intermediate Spectral Theory and Quantum Dynamics*” by C.R. de Oliveira. • *Cont Phys.* **52**, 255 (2011)
- [O1] J Leach, **J B Götte**, L Allen, M Padgett, A Wright, J Girkin and S M Barnett. *The World through a Spinning Window*.
• SPIE Newsroom (2007) doi: 10.1117/2.1200710.0887

Conference presentations

Oral presentations (presenter in boldface)

- **(Invited)** 13th International Conference on Correlation Optics: K van Kruining, A G Hayrapetyan and **J B Götte**, “*Nonuniform currents and spins of relativistic electron vortices in a magnetic field*”. Chernivtsi, Ukraine. September 2017.
- Complex Light and Optical forces XI: **J B Götte**, R Cameron and S M Barnett, “*Orientated molecular information from chiral rotational spectroscopy*”. SPIE Photonics West, San Francisco, CA, USA, February 2017.
- **(Invited)** META 16 Conference: G Sun, K van Kruining, T Pohl and **J B Götte**, “*Directionality in coherent dipole-dipole interactions*”. Malaga, Spain. July 2016.
- DPG Frühjahrstagung 2016: **R Cameron**, J B Götte and S M Barnett, “*Chiral Rotational Spectroscopy*”. Hanover, Germany. March 2016.
- DPG Frühjahrstagung 2016: **A Hayrapetyan** and J B Götte, “*Laser-driven relativistic charged and neutral twisted matter waves*”. Hanover, Germany. March 2016.
- **(Invited)** 12th International Conference on Correlation Optics: **J B Götte** and M R Dennis, “*Vortex eigenpolarizations and singularimetry*”. Chernivtsi, Ukraine. September 2015.
- ICOAM 2015: **A Hayrapetyan** and J B Götte, “*Angular momentum representation of laser driven twisted neutrons*”. New York, USA. August 2015.
- **(Invited)** 2nd International Workshop on “*Nonlinear Photonics: Theory, Materials and Applications*”: **J B Götte** and M R Dennis, “*Vortex eigenpolarizations and dyadic singularities*”. St. Petersburg, Russia. June/July 2015.
- **(Invited)** EMN Optoelectronics meeting 2015: **J B Götte**, “*Singularimetry and the vortex microscope*”. Beijing, China. April 2015.
- DPG Frühjahrstagung 2015: D Jukic, T Pohl and **J B Götte**, “*Trapping atoms with laser written waveguides*”. Heidelberg, Germany. March 2015.
- XIX PSC optical conference on wave and quantum aspects of contemporary optics: **J B Götte** and M R Dennis, “*Vortex Singularimetry*”. Wojanow Palace, Poland, September 2014.
- DPG Frühjahrstagung 2014: **J B Götte**, “*Optical realisation of weak measurements with non-integer OAM states*”. Berlin, Germany. March 2014.
- **(Invited)** Complex Light and Optical forces VIII: **J B Götte**, “*Weak measurements with non-integer orbital angular momentum states*”. SPIE Photonics West, San Francisco, CA, USA, February 2014.
- **(Invited)** Spintronics VI: **J B Götte**, “*Spin-orbit interactions and singularimetry*”. SPIE Optics & Photonics, San Diego, CA, USA. August 2013.

- **(Invited)** ICOAM 13: **J B Götte** and M R Dennis, “Singularimetry”. Glasgow, UK. June 2013.
- DPG Frühjahrstagung 2013: **J B Götte**, S Shinohara and Martina Hentschel, “Are Fresnel filtering and the angular Goos-Hänchen shift the same?”. Regensburg, Germany. March 2013.
- Photon 12: **J B Götte** and M R Dennis, “Singularimetry - Probing chiral surfaces with optical vortices”. Durham, UK. September 2012.
- **(Invited)** Symposium on Topological Light-wave synthesis and its Applications: **J B Götte**, “Altering the topology of light with reflection”. University of Chiba, Japan. July 2012.
- DPG Frühjahrstagung 2012: **J B Götte** and M Hentschel, “Varying boundary conditions for dielectric microcavities”. Berlin, Germany. March 2012.
- DPG Frühjahrstagung 2012: **J B Götte** and M R Dennis, “Fine structure of reflection”. Stuttgart, Germany. March 2012.
- ICQI 2011: **S M Barnett**, A M Yao, F M Miatto, L Allen, D T Pegg, J B Götte, M J Padgett, B Jack, J Romero and S Franke-Arnold, “Quantum Description of the Angular Coordinate and Angular Momentum”. International Conference on Quantum Information, Ottawa, Canada. June 2011.
- PIERS 2011: **A C T Thijssen**, M J Cryan, M Klemm, M R Dennis, J B Götte, J G Rarity, J L O'Brien, and R Oulton, “Spin-orbit Coupling of Light in Surface Plasmonic Cross Nano-antennas”. 29th PIERS Conference, Marrakech, Morocco. March 2011.
- Complex Light and Optical Forces V: **J B Götte** and M R Dennis, “Probing quantum cores of optical vortices with atoms”. SPIE Photonics West, San Francisco, USA. January 2011.
- Complex Light and Optical Forces V: **M R Dennis** and J B Götte, “Waves near varying boundaries: spatial shifts, localization, and Dirichlet points”. SPIE Photonics West, San Francisco, USA. January 2011.
- Photonics 2010: **A C T Thijssen**, M J Cryan, M Klemm, M R Dennis, J B Götte, J G Rarity, J L O'Brien, and R Oulton, “Spin-orbit Coupling of Light in Surface Plasmonic Cross Nano-antennas”. International Conference on Fiber Optics and Photonics, Guwahati, India. December 2010.
- Photon 10: **J B Götte** and M R Dennis, “Non-specular reflection from surface metamaterials with Dirichlet singularities”. Southampton, UK. August 2010.
- Photon 10: **J B Götte** and M R Dennis, “Displacement effects for structured light on reflection”. Southampton, UK. August 2010.
- FiO 2008: **J B Götte**, A Aiello, J P Woerdman, “Goos-Hänchen effect for high loss materials”. Frontiers in Optics 2008, Rochester, USA. October 2008.
- Rank Prize Meeting 2008: **J B Götte**, “Light in moving media”. Push and Pull of optical angular momentum?, Grasmere, UK. July 2008.
- Photon 06: **J B Götte**, S Franke-Arnold, R Zambrini, S M Barnett, “Quantum Theory of Fractional Orbital Angular Momentum”. Quantum Electronics and Photonics Conference, Manchester, UK. September 2006.

- ICSSUR 05: **J B Götte**, S Franke-Arnold, S M Barnett, "Violation of a local angular uncertainty relation". 9th International Conference on Squeezed States and Uncertainty Relations, Besançon. France. May 2005.
- DPG 2005: **J B Götte**, S Franke-Arnold, S M Barnett, "*Angular EPR paradox*". 69. Jahrestagung der Deutschen Physikalischen Gesellschaft, Berlin, Germany. March 2005.

Poster presentations

- DPG Frühjahrstagung 2016: **A Hayrapetyan**, J B Götte, S Klevansky, S Fritzsche, K Grigoryan, R Petrosyan, "*Electromagnetic wave propagation in time-dependent Hermitian and non-Hermitian structures*". Hanover, Germany. March 2016.
- DPG Frühjahrstagung 2016: **A Hayrapetyan**, M Ornigotti, K Grigoryan, A Szameit and J B Götte, "*Manipulating electron vortex beams with crossing laser beams*". Hanover, Germany. March 2016.
- DPG Frühjahrstagung 2016: **K van Kruijning** and J B Götte, "*Optical helicity and duality symmetry in matter;*". Hanover, Germany. March 2016.
- Atomic Physics 2014: D Jukic, T Pohl and **J B Götte**. "*Optical atom chip*", MPI-PKS workshop on atomic physics, Dresden, Germany. November 2014.
- WCMM12: **J B Götte**, S Shinohara and M Hentschel. "*Are Fresnel Filtering and the angular Goos-Hänchen shift the same?*", MPI-PKS workshop on Wave Chaos from the Micro- to the Macroscale, Dresden, Germany. October 2012.
- ICOAM 2010: **J B Götte** and M R Dennis, "*Goos-Hänchen shift for optical vortices*," 1st International Conference on Orbital Angular Momentum, York, UK. March 2011.
- NNV-AMO 2008: **J B Götte**, E Driessen, M de Dood, G t' Hooft, J P Woerdman. "*Plasmonic Goos-Hänchen shifts on bimetal gratings*," 32nd Annual Meeting NNV-AMO, Lunteren, The Netherlands. October 2008.
- ICoLS 2005: **J B Götte**, S Franke-Arnold, S M Barnett. "*Quantum Optical Theory of Orbital Angular Momentum*," 17th International Conference on Laser Spectroscopy, Aviemore, UK. June 2006.
- Photon 04: **J B Götte**, S Franke-Arnold, S M Barnett. "*Proposed Test for an Angular EPR paradox*", Quantum Electronics and Photonics Conference, Glasgow, UK. September 2004.
- QCMC 2004: **J B Götte**, S Franke-Arnold, S M Barnett, "*Angular EPR paradox*", The 7th International Conference on Quantum Communications, Measurement and Computing, Glasgow, UK. July 2004.

Invited seminars

- *Group of Professor Igor Lesanovsky, University of Nottingham, UK, "Trapping atoms with laser written waveguides", March 2016.*
- *Quantum Theory Group, University of Glasgow, UK, "Trapping atoms with laser written waveguides", May 2015.*
- *Colloquium at the 3. Physikalisches Institut, University of Stuttgart, Germany, "Interfacing structured light and matter", May 2015.*

- College of Engineering and Applied Sciences, Nanjing University, China, "*Perturbing the Circle: Vortex split up and fractional orbital angular momentum*", April 2015.
- Optics Group, University of Glasgow, UK, "*Eigenpolarizations for giant optical transverse beam shifts*", March 2014.
- Helmholtz Institut Jena, Germany, "*Optical and electronic vortices*", November 2013.
- Quantum Theory Group, University of Glasgow, UK, "*Optical vortex metrology & quantum weak values*", June 2013.
- Computational Nonlinear & Quantum Optics Group, University of Strathclyde, UK. "*Topological aberrations*", July 2012.
- Trinity College Dublin, Ireland. "*Topology in light-matter interaction*", July 2012.
- MPI-PKS, Dresden, Germany. "*Weak values and the fine structure of reflection*", April 2011.
- Computational Nonlinear & Quantum Optics Group, University of Strathclyde, UK. "*Fine structure in the reflection of cylindrical light beams*", December 2010.
- Quantum Optics & Quantum Information Group, Leiden University, The Netherlands. "*Displaced singularities*", September 2010.
- Computational Nonlinear & Quantum Optics Group, University of Strathclyde, UK. "*The Goos-Hänchen shift from varying boundary conditions*", February 2010.
- Theoretical Physics Group, University of Bristol, UK. "*Goos-Hänchen shift in external reflection*", April 2009.
- Quantum Optics & Quantum Information Group, Leiden University, The Netherlands. "*Quantum Formulation of Fractional Orbital Angular Momentum*", May 2007.
- Institute for Quantum Computing, University of Waterloo, Ontario, Canada. "*Orbital Angular Momentum of Light*", September 2006.