

CURRICULUM VITAE

DR. CHRISTIAN SÄMANN

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PERSONAL AND CONTACT INFORMATION

<i>date of birth:</i>	April 23, 1977	<i>nationality:</i>	German
<i>address:</i>	Department of Mathematics Heriot-Watt University Edinburgh EH14 4AS, UK Tel: +44(0)131 451 3966	<i>office:</i>	CMG.18
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POSTDOCTORAL POSITIONS AND SCIENTIFIC EDUCATION

<i>since Oct 2009:</i>	Advanced postdoctoral position (EPSRC CAF) at Heriot-Watt University, Edinburgh, UK
<i>Oct 2007 - Sep 2009:</i>	Postdoctoral position (IRCSET Fellowship) at Trinity College Dublin, Ireland
<i>Feb 2006 - Sep 2007:</i>	Postdoctoral position (Hamilton Scholar) at the Dublin Institute for Advanced Studies, Ireland
<i>Dec 2002 - Jan 2006:</i>	Graduate Student at University of Hannover PhD in Physics (30.1.2006)
<i>Nov 2001 - Oct 2002:</i>	Visitor at IHES and ENS, Paris, France
<i>Aug 2000 - Sep 2001:</i>	Student at the University of Texas at Austin Master of Arts in Physics (20.8.2001), (GPA: 4.0/4.0)
<i>Nov 1997 - Jul 2000:</i>	Student at the University of Würzburg, Germany Vordiplom in Physics and Mathematics (both: sehr gut/A)

GENERAL EDUCATION

<i>1996:</i>	Abitur (grade: 1.0/A)
<i>1992 - 1996:</i>	Winfriedschule Fulda, Germany
<i>1988 - 1992:</i>	Deutsche Schule Thessaloniki, Greece
<i>1987 - 1988:</i>	Winfriedschule Fulda, Germany
<i>1983 - 1987:</i>	Bonifatiuschule Fulda, Germany

- [25] C. Papageorgakis and C. Sämann, *The 3-Lie algebra (2,0) tensor multiplet and equations of motion on loop space*, accepted by JHEP, 1103.6192 [hep-th].
- [24] S. A. Cherkis, C. O'Hara and C. Sämann, *Super Yang-Mills Theory with Impurity Walls and Instanton Moduli Spaces*, 1103.0042 [hep-th].
- [23] M. Ihl, C. Sachse and C. Sämann, *Fuzzy Scalar Field Theory as Matrix Quantum Mechanics*, JHEP **03** (2011) 091 [1012.3568 [hep-th]].
- [22] J. DeBellis, C. Sämann and R. J. Szabo, *Quantized Nambu-Poisson Manifolds in a 3-Lie Algebra Reduced Model*, JHEP **04** (2011) 075 [1012.2236 [hep-th]].
- [21] C. Sämann, *Constructing Self-Dual Strings*, accepted by Commun. Math. Phys. [1007.3301 [hep-th]], 1 citation.
- [20] C. Sämann, *The Multitrace Matrix Model of Scalar Field Theory on Fuzzy CP^n* , SIGMA **6** (2010) 50 [1003.4683 [hep-th]], 1 citation.
- [19] J. DeBellis, C. Saemann and R. J. Szabo, *Quantized Nambu-Poisson Manifolds and n -Lie Algebras*, J. Math. Phys. **51** 122303 [1001.3275 [hep-th]], 6 citations.
- [18] N. Akerblom, C. Sämann and M. Wolf, *Marginal Deformations and 3-Algebra Structures*, Nucl. Phys. B **826** 456 0906.1705 [hep-th], 20 citations.
- [17] C. I. Lazaroiu, D. McNamee, C. Sämann and A. Zejak, *Strong Homotopy Lie Algebras, Generalized Nahm Equations and Multiple M2-Branes*, 0901.3905 [hep-th], 7 citations.
- [16] S. A. Cherkis, V. Dotsenko and C. Sämann, *On Superspace Actions for Multiple M2-Branes, Metric 3-Algebras and their Classification*, Phys. Rev. D **79** (2009) 086002 [0812.3127 [hep-th]], 15 citations.
- [15] C. I. Lazaroiu, D. McNamee and C. Sämann, *Generalized Berezin-Toeplitz Quantization of Kähler Supermanifolds*, JHEP **05** (2009) 055 [0811.4743 [hep-th]], 1 citation.
- [14] S. A. Cherkis and C. Sämann, *Multiple M2-branes and Generalized 3-Lie algebras*, Phys. Rev. D **78** (2008) 066019 [0807.0808 [hep-th]], 54 citations.
- [13] C. I. Lazaroiu, D. McNamee and C. Sämann, *Generalized Berezin Quantization, Bergman Metrics and Fuzzy Laplacians*, JHEP **0809** (2008) 059 [0804.4555 [hep-th]], 8 citations.
- [12] D. O'Connor and C. Sämann, *Fuzzy Scalar Field Theory as a Multitrace Matrix Model*, JHEP **0708** (2007) 066 [0706.2493 [hep-th]], 11 citations.
- [11] C. Sämann, *Fuzzy Toric Geometries*, JHEP **0802** (2008) 111 [hep-th/0612173], 15 citations.
- [10] S. Murray and C. Sämann, *Quantization of Flag Manifolds and their Supersymmetric Extensions*, Adv. Theor. Math. Phys. **12** (2008) 641 [hep-th/0611328], 16 citations.

¹citation counts by SPIRES-HEP, currently missing 10+ citations

- [9] S. Kürkçüoğlu and C. Sämann, *Drinfeld Twist and General Relativity with Fuzzy Spaces*, *Class. Quant. Grav.* **24** (2007) 291 [[hep-th/0606197](#)], 25 citations.
- [8] O. Lechtenfeld and C. Sämann, *Matrix Models and D-branes in Twistor String Theory*, *JHEP* **0603** (2006) 002 [[hep-th/0511130](#)], 18 citations.
- [7] C. Sämann, *On the Mini-Superambitwistor Space and $\mathcal{N} = 8$ Super Yang-Mills Theory*, *Advances in Mathematical Physics* (2009) 784215 [[hep-th/0508137](#)], 14 citations.
- [6] M. Ihl and C. Sämann, *Drinfeld-Twisted Supersymmetry and Non-Anticommutative Superspace*, *JHEP* **0601** (2006) 065 [[hep-th/0506057](#)], 27 citations.
- [5] A. D. Popov, C. Sämann and M. Wolf, *The Topological B-Model on a Mini-Supertwistor Space and Supersymmetric Bogomolny Monopole Equations*, *JHEP* **0510** (2005) 058 [[hep-th/0505161](#)], 24 citations.
- [4] C. Sämann, *The Topological B-Model on Fattened Complex Manifolds and Subsectors of $\mathcal{N} = 4$ Self-Dual Yang-Mills Theory*, *JHEP* **0501** (2005) 042 [[hep-th/0410292](#)], 21 citations.
- [3] A. D. Popov and C. Sämann, *On Supertwistors, the Penrose-Ward Transform and $\mathcal{N} = 4$ Super Yang-Mills Theory*, *Adv. Theor. Math. Phys.* **9** (2005) 931 [[hep-th/0405123](#)], 54 citations.
- [2] C. Sämann and M. Wolf, *Constraint and Super Yang-Mills Equations on the Deformed Superspace $R_h^{(4|16)}$* , *JHEP* **0403** (2004) 048 [[hep-th/0401147](#)], 29 citations.
- [1] P. Cartier, C. DeWitt-Morette, M. Ihl, C. Sämann and M. E. Bell, *Supermanifolds - Application To Supersymmetry*, in: “Multiple facets of quantization and supersymmetry: Michael Marinov memorial volume”, Eds. M. Olshanetsky and A. Vainshtein, p. 412, World Scientific (2002) [[math-ph/0202026](#)], 11 citations.

CONFERENCE PROCEEDINGS AND FURTHER SCIENTIFIC WORK

- [7] C. Sämann and R. J. Szabo, *Branes, Quantization and Fuzzy Spheres*, published in PoS (CNCFG2010) 005 [[1101.5987](#) [[hep-th](#)]].
- [6] D. O’Connor and C. Sämann, *A Multitrace Matrix Model from Fuzzy Scalar Field Theory*, published in the conference proceedings, SQS’07, Dubna, 2007 [[0709.0387](#) [[hep-th](#)]], 3 citations.
- [5] C. Sämann, *Aspects of Twistor Geometry and Supersymmetric Field Theories within Superstring Theory*, PhD thesis, supervisors: Prof. Dr. O. Lechtenfeld and Dr. A. D. Popov [[hep-th/0603098](#)], 6 citations.
- [4] C. Sämann, *The Mini-Superambitwistor Space*, published in the conference proceedings, SQS’05, Dubna, 2005 [[hep-th/0511251](#)], 5 citations.
- [3] C. Sämann, *A New Representation of the Supersymmetric Fock Space by Using Supermathematics*, Master thesis, University of Texas at Austin, supervisor: Prof. Dr. C. DeWitt-Morette.

- [2] M. Ihl, C. Sämann, *Scintillator Wavelength-Shifting Fiber Response to Magnetic Fields*, Research Project in collaboration with Prof. Dr. K. Lang, Univ. of Texas at Austin, 2000.
- [1] C. Sämann, *Herstellung und Charakterisierung von Nano-Silberclustern auf HOPG (Production and characterization of nano-silverclusters on HOPG)*, Research Project in the group of Prof. Dr. G. Gerber, Univ. of Würzburg, 2000.

INVITATIONS FOR FUTURE TALKS AND LECTURES

- 2012 Isaac Newton Institute for Mathematical Sciences in Cambridge, one month stay during the program “Mathematics and Applications of Branes in String and M-theory”
- 2011 Invitation to talk at the Bayrischzell Workshop 2011: “Noncommutativity and Physics: Spacetime Quantum Geometry”
Invitations to talk at UCLA, Caltech, Berkeley, Liverpool (2 talks), Imperial College and Cambridge

INVITED TALKS AND LECTURES

- 2011 Institute of Mathematics, Bucharest, 29.4.2011, *Quantization of Two-Plectic Manifolds*, during the fourth annual meeting of the EU-NCG Research Training Network.
 - Australian National University, Canberra, 17.2.2011, *Monopoles, Integrability and M-Theory*.
 - Queen Mary University, London, 20.1.2011, *Constructing Self-Dual Strings*.
 - EMPG, Edinburgh, 19.1.2011, *Constructing Self-Dual Strings*.
- 2010 ICMS, Edinburgh, 15.6.2010, *M2-Branes Ending on M5-Branes*, during the workshop “Hodge theoretic reflections on the string landscape”.
 - Dublin Institute for Advanced Studies, 29.5.2010, *The Geometry of M2-Branes Ending on M5-Branes*, during the “17th Irish Quantum Field Theory Meeting”.
- 2009 Edinburgh, 30.9.2009, *Marginal Deformations and 3-Algebra Structures*, during the “25th North British Mathematical Physics Seminar and 10th anniversary of the Edinburgh Mathematical Physics Group”.
 - Trinity College Dublin, 15.5.2009, *On Stacks of M2-Branes*, during the “16th Irish Quantum Field Theory Meeting”.
 - University of Amsterdam, 24.3.2009, *On the Effective Description of Multiple M2-branes*.
 - Edinburgh Mathematical Physics Group, 4.3.2009, *On the Effective Description of Multiple M2-branes*.
 - Trinity College Dublin, 9.2.2009, *On the Effective Description of Multiple M2-Branes*.
 - Edinburgh University, 18.1.2009, *Generalized Berezin-Toeplitz Quantization and Aspects of the Bagger-Lambert-Gustavsson Theory*.
- 2008 Dublin Institute for Advanced Studies, Dublin, 17.6.2008, *Generalized Berezin Quantization, Bergman Metrics and Fuzzy Laplacians*, during the “First Annual Meeting of Noncommutative Geometry Network”.
 - Dublin Institute for Advanced Studies, Dublin, 31.1.2008, *Constructing Noncommutative Projective Algebraic Varieties*, during the “Mini-workshop on Fuzzy Physics and Random Matrices.”

INVITED TALKS AND LECTURES, CONTINUED

- 2007 Université François-Rabelais, Tours, 29.11.2007, *Field Theory on Fuzzy Spaces*. • Durham, 23.8.2007, *Matrix Models in Twistor String Theory*, during the conference “Twistor, Strings and Scattering Amplitudes.” • BLTP, JINR, Dubna, 31.7.2007, *Fuzzy scalar field theory as a multitrace matrix model*, during the workshop “Supersymmetries and Quantum Symmetries (SQS’07)”. • Imperial College, London, 17.5.2007, *On the Phase Diagram of Fuzzy Scalar Field Theory*. • Bayrischzell, 13.5.2007, *On the Phase Diagram of Fuzzy Scalar Field Theory*, during the workshop on Non-Commutativity and Physics in Bayrischzell 2007.
- 2006 EMPG, Edinburgh, 24.5.2006, *Matrix Models and D-Branes in Twistor String Theory*. • EMPG, Edinburgh, 24.5.2006, *Lecture on Supertwistors*. • DIAS, Dublin, 13.5.2006, *Matrix Models and D-Branes in Twistor String Theory*, during the 13th Irish Quantum Field Theory Meeting. • DESY, Hamburg, 18.1.2006, *Lecture on Supertwistors*. • DESY, Hamburg, 18.1.2006, *Matrix Models and D-Branes in Twistor String Theory*.
- 2005 Werner-Heisenberg-Institut, München, 4.11.2005, *Aspects of Twistor String Theory*. • BLTP, JINR, Dubna, 28.7.2005, *The Mini-Superambitwistor Space*, during the workshop “Supersymmetries and Quantum Symmetries (SQS’05).” • BLTP, JINR, Dubna, July 2005, *The Penrose-Ward transform*, lecture during the “Advanced Summer School on Modern Mathematical Physics.” • Physikzentrum Bad Honnef, 19.3.2005, *Variations on the Topological B-Model in Twistor String Theory*, during the workshop “Beyond the Standard Model.”
- 2004 MPI for flow research, Göttingen, 17.8.2004, $\mathcal{N} = 4$ *Super-Yang-Mills Equations on Deformed Superspace*, during the workshop “Noncommutative Integrable Systems and related structures.”

FURTHER CONFERENCES, WORKSHOPS AND SCHOOLS ATTENDED

- 2010 *Deformation Methods in Mathematics and Physics*, Oberwolfach, Germany.
- 2009 *Strings 2009*, Rome, Italy.
- 2008 *Strings 2008*, CERN, Switzerland. • *Gauge theories, Moduli spaces and Representation theory*, Trinity College Dublin. • *RTN Winter School on Strings, Supergravity and Gauge Theories*, CERN, Switzerland.
- 2007 *Annual Theory Meeting*, Durham. • *Workshop on Noncommutative Geometry*, Bratislava. • *RTN Winter School on Strings, Supergravity and Gauge Theories*, CERN, Switzerland.
- 2006 *Workshop on Noncommutative Geometry*, Bratislava, Slovakia. • *O’Raifeartaigh Symposium on Non-Perturbative and Symmetry Methods in Field Theory*, Budapest, Hungary. • *Workshop on Noncommutative Geometry*, DIAS, Dublin, Ireland.
- 2004 *Strings 2004*, College de France, Paris. • *Spring School on Superstring Theory and Related Topics*, ICTP, Trieste. • *Beyond the Standard Model*, Physikzentrum, Bad Honnef 2004.
- 2003 *String-Steilkurs 2003*, DESY, Hamburg. • *International Advanced School on Modern Mathematical Physics*, JINR, Dubna. • *Spring School on Superstring Theory and Related Topics*, ICTP, Trieste. • *New Developments in Mirror Symmetry*, MPI, Leipzig. • *Beyond the Standard Model*, Physikzentrum, Bad Honnef 2003.

FURTHER CONFERENCES, WORKSHOPS AND SCHOOLS ATTENDED, CONTINUED

- 2002 *International Conference on Theoretical Physics*, Paris. • *PASI school on quantum gravity*, CECS, Valdivia, Chile.
- 2001 *The Quantum Structure of Spacetime and the Geometric Nature of Fundamental Interactions*, Corfu, Greece. • *Grundlagen und neue Methoden der theoretischen Physik*, Saalburg.

TEACHING EXPERIENCE

- 2010: F18CF1 - Linear Algebra, Heriot-Watt University (179 students) (Lecture notes available online at www.christiansaemann.de)
- 2009: Lecture series (11 Lectures) on Supersymmetry (15 students) (Lecture notes available online at www.christiansaemann.de)
- since October 2010: Supervision of a PhD student
- 2005: Three invited lectures on twistor theory (see invited lectures)
- Three-day seminars for highly gifted pupils (2008: “Life”, 2007: “Problem Solving”, 2005: “Epistemology”)
- Many tutorials, preparations of homework problems and substitute lecturing both at the University of Hannover and Trinity College Dublin in all standard courses of Theoretical Physics as well some mathematical courses.

RESEARCH GRANTS

- 2011 - 2015: Co-Investigator on STFC rolling grant “Particle Theory at the Tait Institute,” submitted to research council
- 2009 - 2014: *EPSRC Career Acceleration Fellowship* (Grant worth £498,677), Engineering and Physical Sciences Research Council, UK includes a PhD studentship
- 2009 - 2011: *AFR Postdoctoral Grant* (Grant worth €99,837), Fond National de la Recherche Luxembourg (declined in favour of the EPSRC CAF)
- 2007 - 2009: *Research Fellowship* (Grant worth €96,300), Irish Research Council for Science, Engineering and Technology

SCHOLARSHIPS

- 2006 - 2007: *Hamilton Scholarship*, Dublin Institute for Advanced Studies
- 2002 - 2005: *scholarship in the graduate college No. 282*, Deutsche Forschungsgemeinschaft
- 2000 - 2001: *scholarship for studying at the University of Texas*, Studienstiftung des deutschen Volkes (German National Academic Foundation)
- 1998 - 2002: *general scholarship*, Studienstiftung des deutschen Volkes

FURTHER PROFESSIONAL ACTIVITIES

- Refereeing:* I refereed papers for Journal of Mathematical Physics, Physics Letters B, JHEP, Letters in Mathematical Physics and Journal of Physics A
- Organization:* Organizer of the Edinburgh Mathematical Physics Group seminar series since 2009
Co-organizer of the weekly seminars at DIAS 2006-2007
Organizer of the *International Workshop on Fuzzy Physics and Noncommutative Geometry 2007*, DIAS

FURTHER SKILLS

- Languages:* Fluent in German, English; working knowledge of French and Greek
- Computers:* Experience with Windows, Linux, MSOffice, LaTeX
programming experience in php, SQL, HTML, C++, C, Turbo-Pascal
very good skills in JAVA and Mathematica
author of the Celsius Library System, a bibliography tool and software package for administrating electronic documents

OTHER INTERESTS

- Music:* I have a degree in church music, the *C-Examen* (curriculum included piano, organ, conducting, theory, liturgy)
Singing and conducting, e.g. in the *Städtischer Konzertchor Winfridia*, Fulda, and the *Concert Choir of the University of Texas*
Organist working in several churches until 2009
Composing music for piano and organ
- Philosophy:* Aesthetics, Religion and Science