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Curriculum Vitæ

OLAF KLAUS LECHTENFELD
Dr. rer. nat., Full Professor

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Personal Data

Born:	30 Oct 1959 in Koblenz, Fed. Rep. of Germany
Parents:	Gerd Lechtenfeld (high school teacher), Elfriede Lechtenfeld née Hartmann (medical assistant)
Nationality:	German
Languages:	German, English, French
Family Status:	married since 1985 to Sabine Lechtenfeld née Beck, two children: Moritz (born 1985), Robin (born 1990)
Home Address:	Körtingstraße 6, 30161 Hannover, Tel.: +49 511 392685
Hobbies:	triathlon, running, mountaineering, guitar

Education

04/66 – 07/69	Freiherr-von-Stein Grundschule Koblenz (primary school)
08/69 – 06/77	Görres-Gymnasium Koblenz (secondary & high school)
15/06/1977	Abitur (graduation, one year early), grade: 1,0
10/77 – 12/84	Universität Bonn, physics and mathematics
11/06/1979	Diplom-Vorprüfung (B.Sc.), grade: sehr gut
01/02/1982	Diplom-Hauptprüfung (M.Sc.), grade: sehr gut, advisor: K. Dietz Thesis: *Systematic treatment of bound states in QED*
07/12/1984	PhD in physics, grade: magna cum laude, advisor: K. Dietz Thesis: *Construction of the Nicolai map in supersymmetric field theories*
01/08/1992	Nomination for Full Professor (C4), Universität Hannover

Scholarships, Employment, Functions

1980 – 1982	Scholarship by the Studienstiftung des deutschen Volkes
02/82 – 08/85	Teaching Assistant, Universität **Bonn**
09/85 – 08/87	Research Fellow, div. TH, CERN, **Geneva**
09/87 – 08/90	Research Associate, City College of CUNY, **New York**
06/88 – 07/88	Visiting Professor (C3), Universität Karlsruhe
26/06/1990	Offer of Assistant Professorship (tenure track), Pennsylvania State University
09/90 – 07/92	Member, Institute for Advanced Study, **Princeton**
since 01/08/1992	Full Professor (C4, tenure) for Theoretical Physics, Universität **Hannover**
10/96 – 03/97	Sabbatical Leave at IAS Princeton and at CERN, supported by Volkswagen Foundation
04/97 – 03/07	Head of Graduate Training Group *Quantum field theoretical methods...*
04/98 – 03/02	Acting Director of the Institute for Theoretical Physics
1999 – 2006	Founding member of the DFG Priority Program *String theory...*
08/01 – 04/02	Sabbatical Leave at SUNY at Stony Brook, supported by Volkswagen Foundation
04/05 – 03/07	Founding Dean of the Faculty of Mathematics and Physics
10/07 – 09/14	PI in Cluster of Excellence *QUEST* (responsible for research area *Space-Time*)
10/08 – 09/17	PI in Graduate Training Group *Analysis, Geometry and String Theory*
10/07 – 03/08	Sabbatical Leave at CERN as Paid Scientific Associate
12/11 – 08/18	Founder and Head of the *Riemann Center for Geometry and Physics*
10/12 – 03/13	Sabbatical Leave at CECs and USaCh (Chile) and CBPF Rio de Janeiro (Brazil)
10/17 – 03/18	Sabbatical Leave at CECs, USaCh and UAB (Chile)

Main Research Areas

since 1979	**Mathematical physics, quantum field theory, gravitation, supersymmetry:**
1979 – 1980	Representation theory of finite groups
1980 – 1982	Quantum field theory of many-body systems
1982 – 1986	Global supersymmetry (Nicolai map, stochastic equations)
1989 – 1990	Baryon number violation by sphalerons in the standard model
1991 – 1996	Black holes with scalar hair in two and four dimensions
1998 – 2008	$\mathcal{N}=2$ supersymmetric integrable hierarchies
2000 – 2001	Spontaneous partial breaking of supersymmetry
2001 – 2013	Noncommutative field theory: solitons, vortices, monopoles, instantons, waves
2003 –	Extended supersymmetric and/or integrable (many-body) mechanics
2016 –	$\mathcal{PT}$-deformation of integrable systems
since 1986	**String theory in particular**:
1985 – 1987	Superstring amplitudes (tree and one-loop)
1985 – 1989	Methods of conformal field theory, vertex-operator algebras
1987 – 1990	Superstring amplitudes (multi-loop), string field theory
1990 – 1993	Matrix models of two-dimensional quantum (super)gravity
1993 – 2002	$\mathcal{N}=2$ fermionic string theories and selfdual field theories
2000 – 2004	Nonperturbative string configurations, string field theory
2004 – 2006	Twistor string theory, topological strings, pure-spinor strings
2009 –	Gauge fields in higher dimensions and heterotic flux compactifications
2013 –	Aspects of generalized geometry

Publications

200 papers in refereed journals, 1980 – 2019, accumulating **5642** cites, **h=43** (Google scholar, 16/01/20)

10 Selected Publications 01/20

[1] O. Lechtenfeld and G. Zhilin 1711.11144 [hep-th]
A new construction of rational electromagnetic knots,
Phys. Lett. A **382** (2018) 1528.

[2] T.A. Ivanova, O. Lechtenfeld and A.D. Popov 1704.07456 [hep-th]
Solutions to Yang-Mills equations on four-dimensional de Sitter space,
Phys. Rev. Lett. **119**, 061601 (2017).

[3] M. Feigin, O. Lechtenfeld and A. Polychronakos, 1305.5841 [math-ph]
The quantum angular Calogero-Moser model,
JHEP **1307** (2013) 162.

[4] S. Fedoruk, E. Ivanov and O. Lechtenfeld, 1112.1947 [hep-th]
Superconformal mechanics (invited review),
J. Phys. A: Math. Theor. 45 (2012) 173001.

[5] D. Harland, T.A. Ivanova, O. Lechtenfeld and A.D. Popov, 0909.2730 [hep-th]
Yang-Mills flows on nearly Kähler manifolds and G_2-instantons,
Commun. Math. Phys. **300** (2010) 185-204.

[6] J. Escher, O. Lechtenfeld and Z. Yin,
Well-posedness and blow-up phenomena for the 2-component Camassa–Holm equation,
Discrete Cont. Dyn. Syst. A **19** (2007) 493–513.

[7] E. Ivanov and O. Lechtenfeld, hep-th/0307111
N=4 supersymmetric mechanics in harmonic superspace,
JHEP **0309** (2003) 073.

[8] O. Lechtenfeld and A.D. Popov, hep-th/0106213
Noncommutative multi-solitons in 2+1 dimensions,
JHEP **0111** (2001) 040.

[9] M. Dine, W. Fischler, O. Lechtenfeld, J. Polchinski and B. Sakita,
Baryon number violation at high temperature in the Standard Model,
Nucl. Phys. B **342** (1990) 381–408.

[10] V.A. Kostelecký, O. Lechtenfeld, W. Lerche, S. Samuel and S. Watamura,
Conformal techniques, bosonization and tree-level string amplitudes,
Nucl. Phys. B **288** (1987) 173–232.