PERSONAL D	ATA					
Full name:				τ	Jlrich Sperhake	
Date of birth:				1	4 April 1968	
Citizenship:				(German	
Degrees						
January 2009				F F	Iabilitation in Physics Friedrich-Schiller-University, Jena (Germany)	
December 2001				P L	Ph. D. Thesis in Mathematics University of Southampton, Southampton (UK)	
July 1997				E U	Diploma in Physics University of Hamburg, Hamburg (Germany)	
Employmen	Т					
October	2012	-	Present D	Date	Lecturer Department of Applied Mathematics and Theoretical Physic University of Cambridge (UK).	
June	2010	-	October	2012	Ramón y Cajal Researcher. Institute of Space Sciences, CSIC-IEEC, Barcelona (Spain).	
September	2008	-	May	2010	Senior Postdoctoral Researcher. Division of Mathematics, Physics and Astronomy California Institute of Technology (USA).	
September	2005	_	August	2008	Postdoctoral Researcher. Institute of Theoretical Physics, University of Jena (Germany).	
September	2002	-	Ausgust	2005	Postdoctoral Researcher. Center for Gravitational Wave Physics, Penn State University (USA).	
November	2001	_	August	2002	Postdoctoral Researcher. Department of Physics and Astrophysics, Aristotle University of Thessaloniki (Greece).	
September	1997	_	August	1998	Scientific Employee. Institute for Astrophysics, University of Kiel (Germany).	

AWARDS AND HONORS

January	2014	Outstanding Referee of the journals of the APS
June	2010	2010 Habilitation Prize of the University of Jena

PARTICIPATION IN FUNDED RESEARCH PROJECTS

2014-17	Unveiling the Structure of the Universe STFC GR Roller Grant No. ST/L000636/1. P.I.: P. Shellard					
2012	<i>Impact of Charge and Spin on Black-Hole Collisions</i> Barcelona Supercomputing Center, Grant No. AECT-2012-3-0011. P.I.: U. Sperhake					
2012	Black holes in non-asymptotically flat spacetimes Barcelona Supercomputing Center, Grant No. AECT-2012-1-0008. P.I.: U. Sperhake					
2011-15	Numerical Relativity and High Energy Physics EU-FP7-PEOPLE-2011-IRSES Grant No.295189. P.I.: C. Herdeiro					
2011-15	Connecting numerical simulations of black holes with experiment and observations EU-FP7-PEOPLE-2011-CIG Grant No. 293412. P.I.: U. Sperhake					
2011-13	Modeling the Gravitational Wave Emission from Binary Black Hole Mergers Centro de Supercomputación de Galicia (Spain). P.I.: C. F. Sopuerta					
2011-12	Numerical simulations of black-hole dynamics for use in experiment and observation Barcelona Supercomputing Center, Grant Nos. AECT-2011-2-0006, AECT-2011-3-0007					
2010-11	Modelling the Gravitational Wave Emission from Binary Black Hole Mergers Centro de Supercomputación de Catalunya (Spain). P.I.: U. Sperhake					
2010-11	Simulations of Binary Black Hole systems as Sources of Gravitational Radiation Centro de Supercomputación de Galicia (Spain). P.I.: C. F. Sopuerta					
2009-11	Numerical Relativity and the AdS/CFT correspondence Portuguese Ministry of Science and Education. P.I.: V. Cardoso					
2008-15	High-energy grazing collisions of black holes XSEDE/TeraGrid, National Science Foundation (NSF, USA). P.I.: U. Sperhake					
2008-10	High-energy collisions of black holes Centro Nacional de Supercomputación (Spain). P.I.: V. Cardoso					
2002-10	Gravitational Wave Astronomy DFG (Germany). P.I.: B. Brügmann					
2006-08	Dynamics of binary black hole systems Landesrechenzentrum Munich (Germany). P.I.: B. Brügmann					
2001-06	Center for Gravitational Wave Physics (NSF Physics Frontier Center) National Science Foundation (NSF, USA). P.I.: L. S. Finn					

- 2003-06 Black Hole Binaries NSF (USA). P.I.: P. Laguna
- 2000-03 Theoretical Foundations of Sources for Gravitational Wave Astronomy of the Next Century: Synergy between Supercomputer Simulations and Approximation Techniques European Commission Training Network. P.I.: E. Seidel

RESEARCH SUMMARY

Numerical Relativity; Gravitational Wave Physics; Relativistic Astrophysics; Black-Hole Dynamics including High-Energy Collisions; Higher-dimensional Spacetime Models; Oscillations of Relativistic Stars.

PUBLICATION SUMMARY

74 research articles in international peer-review journals; 18 contributions to conference proceedings; 3720 citations (counting only articles in peer reviewed journals), H factor 35, according to InSpire on August 09, 2015: http://inspirehep.net/search?ln=en&p=find+a+sperhake&jrec=1.

PUBLICATIONS IN REFEREED JOURNALS

[P76] D. Trifirò, R. O'Shaughnessy, D. Gerosa, E. Berti, M. Kesden, T. Littenberg, U. Sperhake (2015): *Distinguishing black-hole spin-orbit resonances by their gravitational wave signatures. II: Full parameter estimation*, submitted to Physical Review D,

Preprint: http://arxiv.org/abs/1507.05587.

Citations: 0

[P75] D. Gerosa, M. Kesden, R. O'Shaughnessy, A. Klein, E. Berti, U. Sperhake, D. Trifiró (2015): *Precessional instability in binary black holes with aligned spins*, submitted to Physical Review Letters, Preprint: http://arxiv.org/abs/1506.09116. *Citations: 1*

[P74] D. Gerosa, M. Kesden, U. Sperhake, E. Berti, R. O'Shaughnessy (2015): A multi-timescale analysis of phase transitions in precessing black-hole binaries, submitted to Physical Review D, Preprint: http://arxiv.org/abs/1506.03492. Citations: 2

[P73] M. Horbatsch, H. O. Silva, D. Gerosa, P. Pani, E. Berti, L. Gualtieri, U. Sperhake (2015): *Tensor-multi-scalar theories: relativistic stars and 3+1 decomposition*, submitted to Classical and Quantum Gravity,

Preprint: http://arxiv.org/abs/1505.07462. Citations: 0

[P72] E. Berti *et al.* (2015): *Testing General Relativity with Present and Future Astrophysical Observations*, submitted to Classical and Quantum Gravity,

Preprint: http://arxiv.org/abs/1501.07274. Citations: 37

[P71] U. Sperhake (2014): *The numerical relativity breakthrough for binary black holes*, Classical and Quantum Gravity, **32**, 124011.

Preprint: http://arxiv.org/abs/1411.3997. Citations: 1

[P70] M. Kesden, D. Gerosa, R.O'Shaughnessy, E. Berti & U. Sperhake (2015): *Effective potentials and morphological transitions for binary black-hole spin precession*, Physical Review Letters, **114**, 081103.

Citations: 6

[P69] M. Zilhão, V. Cardoso, C. Herdeiro, L. Lehner & U. Sperhake (2014): *Testing the nonlinear stability of Kerr-Newman black holes*, Physical Review D, **90**, 124088. *Citations: 5*

[P68] V. Cardoso, L. Gualtieri, C. Herdeiro, and U. Sperhake (2014): Exploring New Physics Frontiers Through Numerical Relativity, accepted by Living Reviews in Relativity, Preprint: http://arxiv.org/abs/1409.0014. Citations: 12

[P67] H. Witek, H. Okawa, V. Cardoso, L. Gualtieri, C. Herdeiro, M. Shibata, U. Sperhake, and M. Zilhão (2014): *Higher dimensional Numerical Relativity: code comparison*, Physical Review D, **90**, 084014.

Citations: 2

[P66] U. Sperhake (2014): Numerical relativity: the role of black holes in gravitational wave physics, astrophysics and high-energy physics, General Relativity and Gravitation, **46**, 1689. *Citations: 1*

[P65] D. Gerosa, R. O'Shuaghnessy, M. Kesden, E. Berti, and U. Sperhake (2014): *Capulets and Montagues: distinguishing the rival families of black-hole spin-orbit resonances by their gravitationalwave signatures*, Physical Review D, **89**, 124025. *Citations:* 8

[P64] J. Aasi et al. (2014): The NINJA-2 project: Detecting and characterizing gravitational waveforms modelled using numerical binary black hole simulations, Classical and Quantum Gravity, **31**, 115004.

Citations: 20

[P63] M. Zilhão, V. Cardoso, C. Herdeiro, L. Lehner, and U. Sperhake (2014): *Collisions of oppositely charged black holes*, Physical Review D, **89**, 044008. *Citations: 5*

[P62] I. Hinder *et al.* (2013): *Error-analysis and comparison to analytical models of numerical waveforms produced by the NRAR Collaboration*, Classical and Quantum Gravity, **31**, 025012. *Citations: 57*

[P61] N. Andersson *et al.* (2013): *The Transient Gravitational-Wave Sky*, Classical and Quantum Gravity, **30**, 193002.

Citations: 20

[P60] E. Berti, V. Cardoso, L. Gualtieri, M. Horbatsch, and U. Sperhake (2013): *Numerical simulations of single and binary black holes in scalar-tensor theories: circumventing the no-hair theorem*, Physical Review D, **87**, 124020.

Citations: 28

[P59] D. Gerosa, M. Kesden, E. Berti, R. O'Shaughnessy, and U. Sperhake (2013): *Resonant-plane locking and spin alignment in stellar-mass black-hole binaries: a diagnostic of compact-binary forma-tion*, Physical Review D, **87**, 104028.

Citations: 31

[P58] U. Sperhake (2013): *Numerical relativity in higher dimensions*, International Journal of Modern Physics D, **22**, 1330005.

Citations: 8

[P57] H. Witek, V. Cardoso, A. Ishibashi, and U. Sperhake (2013): *Superradiant instabilities in astro-physical systems*, Physical Review D, **87**, 043513. *Citations: 59*

[P56] U. Sperhake, E. Berti, V. Cardoso, and F. Pretorius (2012): *Universality, maximum radiation and absorption in high-energy collisions of black holes with spin*, Physical Review Letters, **111**, 041101. *Citations: 17*

[P55] M. Zilhão, V. Cardoso, C. Herdeiro, L. Lehner, and U. Sperhake (2012): *Collisions of charged black holes*, Physical Review D, **85**, 124062. *Citations: 14*

[P54] M. Zilhão, V. Cardoso, L. Gualtieri, C. Herdeiro, U. Sperhake, and H. Witek (2012): *Dynamics of black holes in de Sitter spacetimes*. Physical Review D, **85**, 104039. *Citations: 12*

[P53] E. Berti, M. Kesden, and U. Sperhake (2012): *Effects of post-Newtonian Spin Alignment on the Distribution of Black-Hole Recoils*, Physical Review D, **85**, 124049. *Citations: 21*

[P52] P. Ajith *et al.* (2012): *The NINJA-2 catalog of hybrid post-Newtonian/numerical-relativity waveforms for non-precessing black-hole binaries*, Classical and Quantum Gravity, **29**, 124001. *Citations: 63*

[P51] V. Cardoso *et al.* (2012): *NR/HEP: roadmap to the future*, Classical and Quantum Gravity, **29**, 244001.

Citations: 52

[P50] M. Zilhão, M. Ansorg, V. Cardoso, L. Gualtieri, C. Herdeiro, U. Sperhake, and H. Witek (2011): *Higher-dimensional puncture initial data*, Physical Review D, **84**, 084039. *Citations: 16*

[P49] U. Sperhake, E. Berti, and V. Cardoso (2013): *Numerical simulations of black-hole binaries and gravitational wave emission*, Comptes Rendus Physique, **14**, 306-317. *Citations: 28*

[P48] U. Sperhake, V. Cardoso, C. D. Ott, E. Schnetter, and H. Witek (2011): *Collisions of unequal mass black holes and the point particle limit*, Physical Review D, **84**, 084038. *Citations: 26*

[P47] U. Sperhake, B. Brügmann, D. Müller, and C.F. Sopuerta (2011): *Eleven orbit inspiral of a mass ratio 4:1 black-hole binary*, Classical and Quantum Gravity, **28**, 134004. *Citations:* 8

[P46] C.D. Ott, *et al.* (2011): *Dynamics and Gravitational Wave Signature of Collapsar Formation*. Physical Review Letters, **106**, 161103.

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[P45] C. Reisswig, C.D. Ott, U. Sperhake, and E. Schnetter (2011): *Gravitational Wave Extraction in Simulations of Rotating Stellar Core Collapse*. Physical Review D, **83**, 064008. *Citations: 28*

[P44] H. Witek, D. Hilditch, and U. Sperhake (2011): *Stability of the puncture method with a generalized BSSN formulation*. Physical Review D, **83**, 104041. *Citations: 10*

[P43] U. Sperhake, E. Berti, V. Cardoso, F. Pretorius, and N. Yunes (2011): *Superkicks in ultrarelativistic encounters of spinning black holes*. Physical Review D, **83**, 024037. *Citations: 20*

[P42] H. Witek, V. Cardoso, L. Gualtieri, C. Herdeiro, U. Sperhake, M. Zilhão (2011): *Head-on collisions of unequal mass black holes in* D = 5 *dimensions*. Physical Review D, **83**, 044017. *Citations: 36*

[P41] D. Brizuela, J.M. Martín-García, U. Sperhake, and K. Kokkotas (2010): *High-order perturbations of a spherical collapsing star*. Physical Review D, **82**, 104039. *Citations: 4*

[P40] H. Witek, M. Zilhão, L. Gualtieri, V. Cardoso, C. Herdeiro, A. Nerozzi, and U. Sperhake (2010): *Numerical relativity for D dimensional space-times: head-on collisions of black holes and gravita-tional wave extraction.* Physical Review D, **82**, 104014. *Citations: 48*

[P39] H. Witek, V. Cardoso, C. Herdeiro, A. Nerozzi, U. Sperhake, M. Zilhão (2010): *Black holes in a box: towards the numerical evolution of black holes in AdS*. Physical Review D, **82**, 104037. *Citations: 33*

[P38] M. Kesden, U. Sperhake, and E. Berti (2010): *Relativistic Suppression of Black Hole Recoils*. The Astrophysical Journal, **715**, 1006. *Citations: 51*

[P37] E. Berti, V. Cardoso, T. Hinderer, M. Lemos, F. Pretorius, U. Sperhake, and N. Yunes (2010): *Semianalytic estimates of scattering thresholds and gravitational radiation in ultrarelativistic black hole encounters.* Physical Review D, **81**, 104048. *Citations: 32*

[P36] M. Kesden, U. Sperhake, and E. Berti (2010): *Final spins from the merger of precessing binary black holes*. Physical Review D, **81**, 084054. *Citations: 36*

[P35] M. Zilhão, H. Witek, U. Sperhake, V. Cardoso, L. Gualtieri, C. Herdeiro, and A. Nerozzi (2010): *Numerical relativity for D dimensional axially symmetric space-times: formalism and code tests*. Physical Review D, **81**, 084052.

Citations: 46

[P34] E. Berti, V. Cardoso, L. Gualtieri, F. Pretorius, and U. Sperhake (2009): *Comment on 'Kerr Black Holes as Particle Accelerators to Arbitrarily High Energy'*. Physical Review Letters, **103**, 239001. *Citations: 96*

[P33] U. Sperhake, V. Cardoso, F. Pretorius, E. Berti, T. Hinderer, and N. Yunes (2009): *Cross section, final spin and zoom-whirl behavior in high-energy black hole collisions*. Physical Review Letters, **103**, 131102.

Citations: 85

[P32] G. Lovelace, Y. Chen, M. Cohen, J.D. Kaplan, D. Keppel, K.D. Matthews, D.A. Nichols, M.A. Scheel, and U. Sperhake (2010): *Momentum flow in black-hole binaries. II. Numerical simulations of equal-mass, head-on mergers with antiparallel spins.* Physical Review D, **82**, 064031. *Citations: 30*

[P31] M. Gabler, U. Sperhake, and N. Andersson (2009): *Non-linear radial oscillations of neutron stars*. Physical Review D, **80**, 064012. *Citations: 15*

[P30] B. Aylott *et al.* (2009): *Status of NINJA: The Numerical INJection Analysis project*. Classical and Quantum Gravity, **26**, 114008.

Citations: 41

[P29] B. Aylott *et al.* (2009): *Testing gravitational-wave searches with numerical relativity waveforms: Results from the first Numerical INJection Analysis (NINJA) project.* Classical and Quantum Gravity, **26**, 165008.

Citations: 112

[P28] J.A. González, U. Sperhake, and B. Brügmann (2009): *Black-hole binary simulations: The Mass ratio 10:1*. Physical Review D, **79**, 124006. *Citations: 70*

[P27] U. Sperhake, V. Cardoso, F. Pretorius, E. Berti, and J.A. González (2008): *The High-energy collision of two black holes*. Physical Review Letters, **101**, 161101. *Citations: 113*

[P26] L. Gualtieri, E. Berti, V. Cardoso, and U. Sperhake (2008): *Transformation of the multipolar components of gravitational radiation under rotations and boosts*. Physical Review D, **78**, 044024. *Citations: 13*

[P25] E. Berti, V. Cardoso, J.A. González, U. Sperhake, and B. Brügmann (2008): *Multipolar analysis of spinning binaries*. Classical and Quantum Gravity, **25**, 114035. *Citations: 46*

[P24] U. Sperhake, E. Berti, V. Cardoso, J. A. González, B. Brügmann, and M. Ansorg (2008): *Eccentric binary black-hole mergers: The Transition from inspiral to plunge in general relativity*. Physical Review D, **78**, 064069.

Citations: 66

[P23] P. Ajith *et al.* (2008): A Template bank for gravitational waveforms from coalescing binary black holes. I. Non-spinning binaries. Physical Review D, **77**, 104017. *Citations: 178*

[P22] P. Marronetti, W. Tichy, B. Brügmann, J.A. González, and U. Sperhake (2008): *High-spin binary black hole mergers*. Physical Review D, **77**, 064010. *Citations: 108*

[P21] B. Brügmann, J.A. González, M.D. Hannam, S. Husa, and U. Sperhake (2008): *Exploring black hole superkicks*. Physical Review D, **77**, 124047. *Citations: 103*

[P20] S. Husa, J.A. González, M.D. Hannam, B. Brügmann, and U. Sperhake (2008): *Reducing phase error in long numerical binary black hole evolutions with sixth-order finite differencing*. Classical and Quantum Gravity, **25**, 105006.

Citations: 89

[P19] S. Husa, M.D. Hannam, J.A. González, U. Sperhake, and B. Brügmann (2008): *Reducing eccentricity in black-hole binary evolutions with initial parameters from post-Newtonian inspiral*. Physical Review D, **77**, 044037.

Citations: 85

[P18] M.D. Hannam, S. Husa, J.A. González, U. Sperhake, and B. Brügmann (2008): *Where post-Newtonian and numerical relativity meet*. Physical Review D, **77**, 044020. *Citations: 141*

[P17] B. Brügmann, J.A. González, M.D. Hannam, S. Husa, U. Sperhake, and W. Tichy (2008): *Calibration of Moving Puncture Simulations*. Physical Review D, **77**, 024027. *Citations: 219*

[P16] U. Sperhake (2007): *Binary black-hole evolutions of excision and puncture data*. Physical Review D, **76**, 104015.

Citations: 131

[P15] E. Berti, V. Cardoso, J.A. González, U. Sperhake, M.D. Hannam, S. Husa, and B. Brügmann (2007): *Inspiral, merger and ringdown of unequal mass black hole binaries: a multipolar analysis*. Physical Review D, **76**, 064034. *Citationar 105*

Citations: 195

[P14] P. Ajith *et al.* (2007): *Phenomenological template family for black-hole coalescence waveforms*. Classical and Quantum Gravity, **24**, S689. *Citations: 114*

[P13] E. Berti, V. Cardoso, J.A. González, and U. Sperhake (2007): *Mining information from binary black hole mergers: a comparison of estimation methods for complex exponentials in noise*. Physical Review D, **75**, 124017.

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[P12] J.A. González, M.D. Hannam, U. Sperhake, B. Brügmann, and S. Husa (2007): *Supermassive recoil velocities for binaary black-hole mergers with anti aligned spins*. Physical Review Letters, **98**, 231101.

Citations: 211

[P11] P. Marronetti, W. Tichy, B. Brügmann, J.A. González, M.D. Hannam, S. Husa, and U. Sperhake (2007): *Binary black holes on a budget: Simulations using work stations*. Classical and Quantum Gravity, **24**, S43.

Citations: 39

[P10] M.D. Hannam, S. Husa, B. Brügmann, J.A. González, and U. Sperhake (2007): *Beyond the Bowen-York extrinsic curvature for spinning black holes*. Classical and Quantum Gravity, **23**, S579. *Citations: 35*

[P9] J.A. González, U. Sperhake, B. Brügmann, M.D. Hannam, and S. Husa (2007): *The Maximum kick from nonspinning black-hole binary inspiral*. Physical Review Letters, **98**, 091101. *Citations: 246*

[P8] C.F. Sopuerta, U. Sperhake, and P. Laguna (2006): *Hydro-without-Hydro Framework for Simulations of Black-Hole-Neturon-Star Binaries*. Classical and Quantum Gravity, **23**, S579. *Citations: 11*

[P7] U. Sperhake, B. Kelly, P. Laguna, K.L. Smith, and E. Schnetter (2005): *Black-hole head-on collisions and gravitational waves fith fixed mesh-refinement and dynamic singularity excision*. Physical Review D, **71**, 124042.

Citations: 39

[P6] O. Wucknitz, and U. Sperhake (2004): *Deflection of light and particles by moving gravitational lenses*. Physical Review D, **69**, 063001. *Citations:* 7

[P5] U. Sperhake, K.L. Smith, B. Kelly, P. Laguna, and D. Shoemaker (2004): *Impact of densitized lapse slicing on evolutions of a wobbling black hole*. Physical Review D, **69**, 024012. *Citations: 24*

[P4] D. Shoemaker, K.L. Smith, U. Sperhake, P. Laguna, E. Schnetter, and D. Fiske (2003): *Moving black holes via singularity excision*. Classical and Quantum Gravity, **20**, 3729. *Citations: 40*

[P3] U. Sperhake, K.R.S. Sjödin, and J.A. Vickers (2000): *Dynamic Cosmic Strings II: Numerical evolution of excited cosmic strings*. Physical Review D, **63**, 024012. *Citations: 10*

[P2] K.R.S. Sjödin, U. Sperhake and J.A. Vickers (2000): *Dynamic Cosmic Strings I*. Physical Review D, **63**, 024011.

Citations: 11

[P1] D. Koester, U. Sperhake, N.F. Allard, D.S. Finley, and S. Jordan (1998): *Quasi-molecular satellites of Lyman* β *in ORFEUS observations of DA white dwarfs*. Astronomy & Astrophysics, **336**, 276. *Citations: 19*

COVERAGE IN PUBLIC MEDIA

[M7] Black Hole Collisions Help Astronomers Better Understand Their Evolution, 1 April 2015, on TechFraq.

http://techfrag.com/2015/04/01/black-hole-collisions-help-astronomers-

better-understand-their-evolution/

(M. Kesden, et al., PRL, **114**, 081103)

[M6] Simulaciones espacio-temporales, 15 May 2012, in CESGA: Usuarios de Supercomputación.

https://www.cesga.es/es/diseminacion/usuarios_diseminacion/diseminacion_UlrichyCarlos (U. Sperhake *et al.*, PRD, **84**, 084038)

[M5] Schwarze Löcher halten sich bedeckt (Black Holes keep themselves covered), 12 Nov 2008, in Neue Züricher Zeitung.

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[M4] No naked black holes, 3 Oct 2008, ScienceNews, http://sciencenews.org/view/generic/id/37200/title/No_naked_black_hole (U. Sperhake et al., PRL, 101, 161101)

[M3] Intergalactic Projectiles, 17 May 2007, Physical Review Focus Article, http://prlo.aps.org/story/v19/st17 (J.A. González et al., PRL, 98, 231101)

[M2] Schwarze Löcher auf der Flucht (Black Holes on the Run), 8 Jun 2007, in n-tv.de: http://www.n-tv.de/812146.html (J.A. González et al., PRL, 98, 231101)

[M1] Wenn Schwarze Löcher einen Kick bekommen (When Black Holes get a kick), 7 Jun 2007, in Die Welt:

http://www.welt.de/wissenschaft/article928821/Wenn_Schwarze_Loecher_einen_Kick_bekommen.html (J.A. González *et al.*, PRL, 98, 231101)

CONFERENCE PROCEEDINGS

[C18] M. Zilhão, V. Cardoso, C. Herdeiro, L. Lehner & U. Sperhake (2015): *Dynamics of Charged Black Holes*. In Proceedings of the Thirteenth Marcel Grossmann Meeting on General Relativity. Eds. K. Rosquist, R. T. Jantzen, R. Ruffini. p. 983-985. (Singapore: World Scientific).

[C17] U. Sperhake (2015): *Gravitational Recoil and Astrophysical Impact*. In Astrophysics and Space Science Proceedings. 3rd Session of the Sant Cugat Forum on Astrophysics: Gravitational Waves Astrophysics (2014), Ed. C. F. Sopuerta. Volume **40**, 185-202.

[C16] M. Zilhão, V. Cardoso, L. Gualtieri, C. Herdeiro, U. Sperhake, and H. Witek (2014): *Black Hole Collisions in Asymptotically de Sitter Spacetimes*. In Springer Proceedings in Physics. Relativity and Gravitation, 100 Years after Einstein in Prague (2012), Eds. J. Bičák, and T. Ledvinka. Volume **157**, 247-254.

[C15] M. Zilhão, V. Cardoso, C. Herdeiro, L. Lehner, and U. Sperhake (2014): *Head-On Collisions of Charged Black Holes from Rest.* In Springer Proceedings in Mathematics & Statistics. Spanish Relativity Meeting (ERE 2012). Eds. A. Garcia-Parrado, F. C. Mena, F. Moura, and E. Vaz. Volume **60**, 451-455.

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[C11] M. Zilhão, H. Witek, U. Sperhake, V. Cardoso, L.Gualtieri, C. Herdeiro, and A. Nerozzi (2010): *Numerical relativity in higher dimensions*. In: Journal of Physics: Conference Series. GRAVITATION IN THE LARGE: Spanish Relativity Meeting (ERE 2009). Eds. R. Lazkoz, and R. Vera. Volume **229**, 012074.

[C10] H. Witek, V. Cardoso, C. Herdeiro, A. Nerozzi, U. Sperhake, and M. Zilhão (2010): *Black holes in a box*. In: Journal of Physics: Conference Series. GRAVITATION IN THE LARGE: Spanish Relativity Meeting (ERE 2009). Eds. R. Lazkoz, and R. Vera. Volume **229**, 012074.

[C9] U. Sperhake, V. Cardoso, E. Berti, F. Pretorius, T. Hinderer, and N. Yunes (2009): *Ultrarelativistic grazing collisions of black holes*. In: Proceedings of the Twelfth Marcel Grossmann Meeting on General Relativity. Eds. T. Damour, R.T. Jantzen, and R. Ruffini. p. 820-822. (Singapore: World Scientific),

Preprint: http://arxiv.org/abs/1003.0882.

[C8] P. Walter, J. Allen, R. A. Matzner, M. Anderson, A. Nerozzi, and U. Sperhake (2009): *Using openGR for numerical relativity*. In Proceedings of the Twelfth Marcel Grossmann Meeting on General Relativity. Eds. T. Damour, R.T. Jantzen, and R. Ruffini. p. 826-828. (Singapore: World Scientific),

[C7] H. Witek, V. Cardoso, C. Herdeiro, A. Nerozzi, U. Sperhake, and M.Zilhão (2009): *Black holes in a box*. In Proceedings of the Twelfth Marcel Grossmann Meeting on General Relativity. Eds. T. Damour, R.T. Jantzen, and R. Ruffini. p. 829-831. (Singapore: World Scientific),

[C6] U. Sperhake (2009): *Colliding Black Holes and Gravitational Waves*. In: Lecture Notes in Physics, **769**, 125-175: Fourth Aegean Summer School, Black Holes (Springer Berlin Heidelberg). http://www.springerlink.com/content/u5m2077647304466/.

[C5] U. Sperhake, B. Brügmann, J.A. González, M.D. Hannam, and S. Husa (2008): *Head-on Collisions of Different Initial Data*. In: Proceedings of the Eleventh Marcel Grossmann Meeting on General Relativity. Eds. H. Kleinert, R.T. Jantzen, and R. Ruffini (Singapore: World Scientific),

http://eproceedings.worldscinet.com/9789812834300/9789812834300_0210.html.

[C4] M.D. Hannam, S. Husa, B. Brügmann, J.A. González, N. O'Murchadha (2006): *Where do moving punctures go?*. In: Journal of Physics: Conference Series. Einstein's Legacy: From The Theoretical Paradise to Astrophysical Observation; Spanish Relativity Meeting (ERE 2006). Eds. P. Apostoulatos, C. Bona, L. Mas, A.M. Sintes, and J. Stela. Volume **66**, 012047.

[C3] U. Sperhake (2003): *Non-linear neutron star oscillations viewed as deviations from an equilibrium state.* In: Recent Developments in Gravity. Proceedings of the 10th Hellenic Relativity Conference. Eds. K.D. Kokkotas, and N. Stergioulas (World Scientific),

http://eproceedings.worldscinet.com/9789812791238/9789812791238_0027.html.

[C2] U. Sperhake (2002): *Non-linear neutron star oscillations viewed as deviation from an equilibrium state*. In: Proceedings of the 2002 Conference on Gravity, Astrophysics, and Strings at the Black Sea. Eds. P.P. Fiziev, and M.D. Todorov (St. Kliment Ohridski University Press, Sofia), http://www.tcpa.uni-sofia.bg/conf/GAS/gas2002.html.

[C1] N. Allard, D. Koester, U. Sperhake, S. Jordan, and D. Finley (1999): *Quasi-molecular satellites of Lyman* β *observed with ORFEUS*. In: Proceedings of the 11th European Workshop on White Dwarfs, ASP Conference Series 169. Eds. S.-E. Solheim, and E.G. Meistas (Astronomical Society of the Pacific, San Francisco),

PARTICIPATION IN CONFERENCES, WORKSHOPS

[W62] Invited Talk: *Numerical modelling of higher-dimensional black holes*, Gravitational Radiation & Black Hole Formation in particle collisions (21-23 June 2015), Hirakleion, Greece.

[W61] Invited Talk: *Morphologies and phase transitions in precessing black-hole binaries*, 5th Iberian Gravitational-Wave Meeting (12-14 May 2015), Barcelona, Spain.

[W60] Contributed Talk: Averaging the average: Morphology transitions in spin precession of blackhole binaries, VII Black Holes Workshop (18-19 December 2014), Aveiro, Portugal.

[W59] Invited Talk: *Numerical simulations of coalescing binaries*, 10th Rencontres du Vietnam – Very High Energy Phenomena in the Universe (3-9 August 2014), Quy Nhon, Vietnam.

[W58] Invited Talk: *Colliding Black Holes*, Holographic vistas on Gravity and Strings (26-28 May 2014), Kyoto, Japan.

[W57] Invited Talk: *Gravitational Recoil and Astrophysical Impact*, 3rd Sant Cugat Forum on Astrophysics (22-25 April 2014), Sant Cugat, Spain.

[W56] Contributed Talk: *Black-hole binary inspiral and merger in scalar-tensor theory of gravity*, IRSES Conference on Testing General Relativity with Astrophysical Observations (6-10 January 2014), Oxford, MS (USA).

[W55] Invited Talk: *The role of black-hole simulations in fundamental physics*, Spanish Relativity Meeting, ERE 2013 (9-12 September 2013), Benasque (Spain).

[W54] Invited Lecture: *A review of numerical relativity and black-hole collisions*, Mons Meeting 2013: General Relativity and beyond (15-18 July 2013), Mons (Belgium).

[W53] Plenary Talk: *Numerical relatvity: The role of black holes in gravitational wave physics, astrophysics and high-energy physics*, 20th International Conference on General Relativity (7-12 July 2013), Warsaw (Poland).

[W52] Invited Lecture Series: *Black holes on supercomputers: Numerical relativity applications to astrophysics and high-energy physics*, 53rd Cracow School of Theoretical Physics (29 June-5 July 2013), Zakopane (Poland).

[W51] Contributed Talk: Universality and wave absorption in high-energy collisions of spinning black holes, 7th Gulf Coast Gravity Meeting (19-20 April 2013), Oxford, MS (USA).

[W50] Invited Talk: *Black holes in higher dimensions*, SFB/TR7 Semi Annual Meeting (17-18 October 2012), Garching (Germany).

[W49] Invited Talk: *Numerical Relativity simulations of black holes: Methodology and Computational Framework*, Numerical Cosmology 2012, (16-20 July 2012), Cambridge (UK).

[W48] Contributed Talk: *Impact of structure on grazing collisions of black holes*, NRHEP Network First Meeting, (9-13 July 2012), Aveiro (Portugal).

[W47] Invited Talk: *Black holes in D dimensions*, 13th Marcel Grossmann Meeting, (2-6 July 2012), Stockholm (Sweden).

[W46] Invited Talk: *High-speed black-hole collisions with application to trans-Planckian particle scattering*, APS April Meeting, (31 March - 6 April 2012), Atlanta, GA (USA).

[W45] Invited Talk: *Black-hole binary simulations on supercomputers*, 2nd Iberian Gravitational Wave Meeting, (13-17 February 2012), Barcelona (Spain).

[W44] Invited Talk: *Suppression of superkicks in black-hole binary inspiral*, *IV* Black Holes Workshop, (19-21 December 2011), Aveiro (Portugal).

[W43] Invited Talk: *Suppression of superkicks in black-hole binary inspiral*, Numerical Relativity and Gravitational Waves Workshop, (5-9 September 2011), Parma (Italy).

[W42] Contributed Talk: *Black-hole collisions in 3+1 and higher dimensions*, Jerte Advanced Relativity Meeting, (3-6 March 2011), Navaconcejo (Spain).

[W41] Invited Talk: *Colliding black holes in* 3 + 1 *and higher dimensions*, IOP Meeting on Black Holes, Extra Dimensions and Colliders, (9 December 2010), Cambridge (UK).

[W40] Plenary Talk: *Black-hole collisions and gravitational waves*, Iberian Meeting Physics Education, (1-3 September 2010), Vila Real (Portugal).

[W39] Contributed Talk: *Relativistic suppression of black-hole superkicks*, 19th International Conference on General Relativity (GR19), (5-9 July 2010), Mexico City (Mexico).

[W38] Contributed Talk: *11 Orbit inspiral of unequal mass black-hole binaries*, Theory Meets Data Analysis and Comparable and Extreme Mass Ratios Workshop, (20-26 June 2010), Perimeter Institute, Waterloo (Canada).

[W37] Invited Talk: *Numerical simulations of black-hole binaries as sources of gravitational waves*, LISA Astro-GR meeting, (7-11 September 2009), Barcelona (Spain).

[W36] Contributed Talk: *High-energy grazing collisions of black-hole binaries*, 12th Marcel Grossmann Meeting on General Relativity, (12-18 July 2009), Paris (France).

[W35] Contributed Talk: *Accuracy in numerical simulations of unequal-mass black-hole binaries*, Numerical Relativity meets Data Analysis Workshop, (6-9 July 2009), Albert Einstein Institute, Potsdam (Germany).

[W34] Invited Lecture Series: *Numerical simulations of astrophysical black-hole binaries*, 22nd Spring School on Particles and Fields (31 March - 3 April 2009), Taichung (Taiwan).

[W33] Invited Chair of Parallel Session: 24th Texas Symposium on Relativistic Astrophysics (8-12 December 2008), Vancouver (Canada).

[W32] Contributed Talk: *Gravitational recoil from spinning and non-spinning black-hole binaries*, Theoretical Astrophysics in Southern California Workshop (24 July 2008), Center for Gravitational Wave Physics, Penn State University (USA).

[W31] Invited Talk: *Snapshots from the black-hole parameter zoo*, Workshop on the Interface between Post-Newtonian Theory and Numerical Relativity (11-14 June 2008), Friedrich Schiller University Jena (Germany).

[W30] Invited Talk: *Numerical simulations of black hole binaries*, 4th ILIAS-GW Annual General Meeting (8-9 October 2007), University of Tübingen (Germany).

[W29] Contributed Talk: *Unequal mass binary black holes*, SFB/TR7 Meeting (25-26 September 2007), Max-Planck-Institute for Astrophysics Garching (Germany).

[W28] Invited Talk: *Colliding black holes and gravitational waves*, International Summer School on Black Holes (17-22 September 2007), Mytiline, Lesvos (Greece).

[W27] Contributed Talk: *Unequal mass binary black holes*, Spanish Relativity Meeting, ERE 2007 (10-14 September 2007), Puerto de La Cruz, Tenerife (Spain).

[W26] Plenary Talk: *Results from binary black hole simulations*, International Summer School on Theoretical Gravitational Wave Physics (20-24 August 2007), Bad Honnef (Germany).

[W25] Contributed Talk: *Mining information from unequal-mass binaries*, 7th Edoardo Amaldi Conference on Gravitational Waves (8-14 July 2007), Sydney (Australia).

[W24] Contributed Talk: *Head-on collisions of different initial data types*, 18th International Conference on General Relativity (8-14 July 2007), Sydney (Australia).

[W23] Contributed Talk: *Total recoil: The maximum kick from non-spinning black-hole binary inspiral*, Conference of the German Physical Society (5-9 March 2007), Heidelberg (Germany).

[W22] Invited Talk: *The status of numerical relativity following the recent breakthroughs*, Conference of the German Physical Society (5-9 March 2007), Heidelberg (Germany).

[W21] Invited Talk: *Numerical simulations of the binary recoil: The PN-NR interface*, Workshop on the Interface between Post-Newtonian Theory and Numerical Relativity (8-11 February 2007), St. Louis, MO (USA).

[W20] Contributed Talk: *Extracting physical information from the merger of binary black holes*, 3rd Annual Meeting of the European Network on Theoretical Astroparticle Physics (ENTApP), ILIAS N6 (12-14 December 2005), Paris (France).

[W19] Invited Talk: *Status of numerical relativity with a focus on binary black holes*, Numerical Relativity meets Data Analysis Workshop (6-7 November 2006), Massachusetts Institute of Technology, Boston, MA (USA).

[W18] Contributed Talk: *Evolving black-hole binaries using different types of initial data*, Spanish Relativity Meeting, ERE 2006 (4-8 September 2006), Palma de Mallorca (Spain).

[W17] Contributed Talk: *Different paths to numerical simulations of compact binaries*, 11th Marcel Grossmann Meeting (23-29 July 2006), Berlin (Germany).

[W16] Contributed Talk: *Numerical evolutions of compact binaries*, 3rd ILIAS-GW General Meeting (27 February - 2 March 2006), Gran Sasso National Laboratory, Assergi (Italy).

[W15] Contributed Talk: *Numerical Simulations of extreme mass ratio binaries*, International Conference on General Relativity (29 September 2005), Dornburg (Germany).

[W14] Contributed Talk: *Gravitational waves from black hole collisions*, 7th Hellenic Astronomical Conference (8-11 September 2005), Lixourion (Greece).

[W13] Contributed Talk: *Black hole head-on collisions and gravitational waves with fixed mesh refinement and dynamical singularity excision*, 8th Eastern Gravity Meeting (18-19 March 2005), Wake Forest NC (USA).

[W12] Contributed Talk: *Dynamic Black Hole excision with mesh refinement*, 17th International Conference on General Relativity (18-24 Jul 2004), Dublin (Ireland).

[W11] Contributed Talk: *Excision of moving black holes*, The Seventh East Coast Gravity Meeting (11-12 June 2004), Brunswick, ME (USA).

[W10] Contributed Talk: *Dynamic Excision of Moving Black Holes*, Workshop on Evolutions in Numerical Relativity (18-20 March 2004), Boca Raton, FL (USA).

[W9] Contributed Talk: *Long term stable evolutions of dancing Black Holes*, Workshop on numeric and analytic properties of the vacuum Einstein equations (7-9 August 2003), Tübingen (Germany).

[W8] Contributed Talk: *A perturbative study of rotating, collapsing neutron stars*, APS April Meeting (5-8 April 2003), Philadelphia PE (USA).

[W7] Contributed Talk: *Non-linear neutron star oscillations viewed as deviation from an equilibrium state*, Gravity, Astrophysics, and Strings at the Black Sea (10-16 June 2002), Kiten (Bulgaria).

[W6] Contributed Talk: *Non-Linear Neutron Star Oscillations Viewed as Deviations from AN Equilibrium State*, 10th Hellenic Relativity Conference (30 May - 2 June), Kalithea/Chalkidiki (Greece).

[W5] Contributed Talk: *Non-linear neutron star oscillations II: Radial oscillations in Lagrangian gauge*, 3rd EU-network Meeting: Sources of Gravitational Radiation (Februar 2002), Southampton (UK).

[W4] Contributed Talk: *Non-linear radial oscillations of neutron stars*, 16th International Conference on General Relativity (15-21 July 2001), Durban (South Africa).

[W3] Contributed Talk: *Non-linear radial neutron star oscillations*, 2nd EU-network Meeting: Sources of Gravitational Radiation (June 2001), Chalkidiki (Greece).

[W2] Contributed Talk: A new numerical approach to radial oscillations of neutron stars, British Gravity Meeting (27-28 March 2001), Southampton (UK).

[W1] Contributed Talk: *Numerical studies of dynamic Cosmic Strings*, GRSweden Conference (May 2000), Likopping (Sweden).

SEMINARS

[S19] *Black-hole binary inspiral and merger in scalar-tensor theory of gravity* (24 Jan 2014), General Relativity Seminar, DAMTP, University of Cambridge (UK).

[S18] *Collisions of black holes and gravitational wave emission in four and higher dimensional spacetimes* (24 May 2013), Seminar, Department of Mathematical Sciences, University of Durham (UK).

[S17] *The impact of spin-orbit resonances on astrophysical black-hole populations* (16 May 2013), Gravity Seminar Series, School of Mathematics, University of Southampton (UK).

[S16] *Black hole simulations on supercomputers* (7 Nov 2012), HEP-GR Colloquium Series, DAMTP, University of Cambridge (UK).

[S15] *Black holes and gravitational waves* (31 March 2011), School of Mathematics, University of Southampton (UK).

[S14] *Colliding black holes in* 3 + 1 *and higher dimensions* (14 January 2011), Institute of Space Sciences, CSIC-IEEC, Barcelona (Spain).

[S13] *Colliding black holes in* 3 + 1 *and higher dimensions* (13 January 2011), Gravitational Physics Seminar, CSIC, Madrid (Spain).

[S12] *Gravitational recoil in the coalescence of astrophysical black-hole binaries* (24 March 2009), University of Mississippi Colloquium, Oxford, MS (USA).

[S11] *Numerical simulations of astrophysical black-hole binary systems* (19 February 2009), California State University Colloquium, Los Angeles (USA).

[S10] *Gravitational recoil in the coalescence of astrophysical black-hole binaries* (11 February 2009), ICE Colloquium, Barcelona (Spain).

[S9] *High energy grazing collisions of black holes* (15 January 2009), Theoretical Astrophysics including Relativity, California Institute of Technology, Pasadena (USA).

[S8] *High energy collisions of black holes* (30 June 2008), SFB Seminar, Friedrich Schiller University, Jena (Germany).

[S7] *Numerical simulations of astrophysical black-hole binaries* (29 April 2008), Colloquium, Universidad Autónoma de Mexcio, Mexico City (Mexico).

[S6] *Numerical simulations of high-energy collisions of black holes*, (18 March 2008), Relativity Seminar, University of Texas, Austin, TX (USA).

[S5] *Numerical simulations of high-energy collisions of black holes*, (29th February 2008), CENTRA IST Seminar, Institúto Superior Técnico, Lisbon (Portugal).

[S4] *Colliding black holes and gravitational waves*, (17 October 2007), General Relativity Seminar, University de Michoacán, Morelia (Mexico).

[S3] *Mining information from unequal-mass binaries*, (19 February 2007), Numerical Relativity Seminar, Center for Gravitational Wave Physics, Penn State University, State College, PA (USA).

[S2] *Dynamic Black Hole excision with fixed mesh refinement*, (August 2004), AEI Numerical Relativity Seminar, Potsdam (Germany).

[S1] *Towards numerical simulations of neutron stars spacetimes*, (October 2001), Seminar at Queen Mary's School of Mathematical Sciences, London (UK).

CONFERENCE ORGANISATION

- New frontiers in dynamical gravity (24-28 March 2014), Cambridge (UK).
- NR/HEP2 Spring School (11-14 March 2013), Lisbon (Portugal).
- Numerical Relativity and High Energy Physics (31 August 3 September 2011), Caniço (Portugal).
- Summerschool on Theoretical Gravitational Wave Astronomy (20-24 August 2007), Bad Honnef (Germany).
- Conference on General Relativity (26-29 September 2005), Dornburg (Germany).

• 10th Hellenic Relativity Conference on Recent Developments in Gravity, (30 May - 2 June 2002), Kalithea (Greece).

OTHER ACADEMIC/PROFESSIONAL ACTIVITIES

• Board member of *Classical and Quantum Gravity*.

• Acting Referee for: Classical and Quantum Gravity, General Relativity and Gravitation, Journal of High Energy Physics, Physical Review D, Physical Review Letters, Reviews of Modern Physics, Science.

• Affiliations: American Physical Society (APS), German Physical Society (DPG).

• Seminar Series Organisation: SFB Seminar Series (2007-2008), Friedrich Schiller University Jena (Germany); Numerical Relativity Seminar Series (2004-2005), Penn State University, Pennsylvania (USA); Gravitational Wave Physics Seminar (2003-2004), Penn State University, Pennsylvania (USA).

• Research Visits: Yukawa Institute of Theoretical Physics, Kyoto, Japan (2014); California Institute of Technology, Pasadena, CA, USA (2008, 2010, 2011, 2012, 2013, 2014, 2015); University of Mississippi, Oxford, MS, USA (2008, 2010, 2012, 2013); Friedrich Schiller University, Jena, Germany (2009, 2010); IST CENTRA, Lisbon, Portugal (2008, 2009, 2010, 2011, 2012, 2015); Penn State University, Pennsylvania, USA (2007); NASA Goddard Space Flight Center (2007); National Research Council of Spain (CSIC), Madrid, Spain (2006); Albert Einstein Institute, Potsdam, Germany (2004); Department of Physics and Astrophysics, Aristotle University, Thessaloniki, Greece (2002);

- Programming experience:
- Programming languages: C, C++, Fortran
- Programming Packages: Cactus Computational Toolkit, Carpet, hdf5, Mathematica, Maple, Visit.

- Special skills: Parallel Computing (MPI), Use of various Supercomputing Architectures, Mesh Refinement, Data Visualisation.

- Operating systems: Unix, Linux, Windows.

• Teaching Experience:

	2013-2014	University of Cambridge Cambridge (UK)	Lecture (Michaelmas Term) Part III General Relativity			
	2013-2015	University of Cambridge Cambridge (UK)	Lecture (Lent Term) Part II Statistical Physics			
	2008	Friedrich Schiller University Jena (Germany)	Exercise Classes Thermodynamics and Statistical Physics			
	2007	Friedrich Schiller University Jena (Germany)	Lecture and Computer laboratory Numerical Relativity			
	2006	Friedrich Schiller University Jena (Germany)	Exercise Classes Theoretical Mechanics			
	2004	Penn State University Pennsylvania (USA)	Exercise Classes Computational Physics			
	1998–2001	University of Southampton Southampton (UK)	Exercise Classes Mathematics for Engineers			
	• Outreach, P	ublic Lectures:				
19 Mar 2015:		Public Lecture Strong gravity theory and gravitational waves at the Cambridge Science Festival 2015 – Einstein's Legacy, Cambridge (UK).				
5 Oct 2009:		Public Lecture Black holes in physics and astrophysics at the Volkshochschule Hamburg (Germany).				
2006–2007:		Review Talks of the Gravity Group of the University of Jena for prospective undergraduate students.				
	2003–2005:	Planetarium shows for school classes at Penn State University (USA).				
1997–1998:		Open House evenings including observations of planets, the moon, stellar clusters and comets at the Observatory Bergedorf (Germany).				

1997–1998: Guided tours and telescope shows at the Observatory Bergedorf (Germany).