

Curriculum Vitae

Name: **Luciano REZZOLLA**, Prof. Dr.
Office Address: Institute for Theoretical Physics
Max-von-Laue Str. 1, D-60438 Frankfurt am Main, Germany
Tel. +49-69-79847871 – Fax. +49-69-79847879
email: rezzolla@th.physik.uni-frankfurt.;
webpage: <http://astro.uni-frankfurt.de/rezzolla/>
Date of birth: 25th September 1967
Nationality: Italian
Marital Status: Married, three children

Education

1994 – 1997 Ph.D. in Relativistic Astrophysics at SISSA, Trieste, Italy Supervisor: Prof. John C. Miller
1993 – 1994 Served as Officer (Midshipman) in the Technical Corp of the Italian Navy
1991 – 1992 Research work for the Laurea (MSc) Thesis at the Astronomical Observatory, Trieste, Italy
1992 Laurea (MSc) in Physics: 110/110 cum Laude
1989 – 1991 Undergraduate work at the Department of Physics, University of Trieste, Italy
1986 – 1988 Undergraduate work at the Department of Physics, University of Bari, Italy

Employment

2013 – to date Chair of Theoretical Astrophysics, Institute for Theoretical Physics, Frankfurt am Main
2006 – 2014 Head of the Numerical Relativity Group, Albert Einstein Institute
2004 – 2006 Director of the Computing Centre at SISSA, Trieste, Italy
2004 – 2006 Associate Professor in Relativistic Astrophysics at SISSA, Trieste, Italy
2004 – 2013 Adjunct Professor at the Department of Physics and Astronomy
Louisiana State University, Baton Rouge, USA
2000 – 2003 “Ricercatore” (Tenured Assistant Professor) in Relativistic Astrophysics at SISSA, Trieste, Italy
2001, 2002 Visiting Professor during the summer period at the *Albert Einstein Institute*, Golm, Germany
1999 – 2000 Five-year Senior Research Fellow, Astrophysics Sector at SISSA, Trieste, Italy
1998 – 1999 Postdoctoral Fellowship, Physics Dept., University of Illinois at Urbana (with Prof. F.K. Lamb)
1996 – 1998 Postdoctoral Fellowship, NCSA, University of Illinois at Urbana (with Prof. S. L. Shapiro)
1993 – 1994 Served as Officer (Midshipman) in the Italian Navy. Assigned to the submarine “Gazzana”

Professional Highlights

- 2013 Awarded ERC Synergy Grant “BlackHoleCam”
- 2013 Chair of “NewCompStar”, an ESF-funded COST Action
- 2012 Member of the Review Panel for the Canadian NSERC
- 2012 Member of the Editorial board of Living Reviews in Computational Astrophysics
- 2012 Invited member on the AERES review panel for the Observatory of Paris, Meudon
- 2010 – to date Member of the International Society of General Relativity and Gravitation
- 2014 – to date Chief Editor of *hyperspace@gu*: a web blog about General Relativity and Gravitation
- 2009 – 20014 Chief Editor of *hyperspace@aei*: a web blog about General Relativity and Gravitation
- 2009 Member of SOC of *COSPAR 10, Event H02* (Probing strong gravity with gravitational and electromagnetic waves), Bremen, Germany 2010
- 2009 Member of LOC of the Conference *NRDA 2009* (Numerical Relativity, Data Analysis), Potsdam, Germany 2009
- 2009 Member of SOC 19th of *GRG19* (International conference on General Relativity and Gravitation), Mexico City, Mexico 2010
- 2007 – to date Member of the Executive Board of the Virgo-EGO Scientific Council (VESF)
- 2007 – to date Co-Chair of *CompStar*, an ESF-funded research network on compact stars
- 2007 – to date Member of the Steering Committee of *CompStar*
- 2006 – to date Member of the Editorial Board of the Journal *Classical and Quantum Gravity*
- 2006 Chair of LOC of the Conference *New Frontiers in Numerical Relativity*, Potsdam, Germany 2006
- 2006 Member of LOC of the *XI Marcel Grossman meeting*, Berlin, Germany 2006
- 2002 – 2006 Director of the Computing Centre at SISSA, Trieste, Italy
- 2004 – to date Adjunct Professor at the Department of Physics and Astronomy, Louisiana State University, USA
- 2004 – 2006 Member of the Executive Board of the Italian Society of Gravitational Physics and Relativity (SIGRAV)
- 2004 – to date Member of the Italian Society of Gravitational Physics and Relativity (SIGRAV)
- 2003 Co-Chair of LOC of the Conference *Sources of Gravitational Waves*, Trieste, Italy 2003
- 2003 Co-Director of the *Advanced School on Sources of Gravitational Waves*, Trieste, Italy 2003
- 2002 – 2004 Deputy Director of the Computing Centre at SISSA, Trieste, Italy
- 2000 Member of LOC of the Conference *Gravitational Waves: a Challenge to Theoretical Astrophysics*, Trieste Italy 2000

Over the years I have produced many images from the simulations that I have carried out. Many of them have been used by me and others for public outreach and have appeared on newspapers, magazines, calendars, and of course the internet; you can find many of them after googling for “black holes” or “neutron stars”. Some of these images have also won prestigious awards. Animations of my simulations have ended up on the NASA YouTube totalling more than 600,000 downloads, eventually ending-up on the New York Times.

SCIENTIFIC JOURNALS for which I act as Referee:

- *Annalen der Physik*,
- *Astroparticle Physics*,
- *Astrophysical Journal*,
- *Classical and Quantum Gravity*,
- *International Journal of Modern Physics A*,
- *Journal of Applied Mathematics and Physics*,
- *Journal of Cosmology and Astroparticle Physics (JCAP)*,
- *Journal of Geometry and Physics*,
- *Monthly Notices of the Royal Astronomical Society*,
- *Physical Review Letters*,
- *Astronomy and Astrophysics*,
- *Astrophysical Journal Letters*,
- *Astrophysics and Space Science*,
- *General Relativity and Gravitation*,
- *International Journal of Modern Physics D*,
- *Journal of Computational Physics*,
- *Journal of Fluid Mechanics*,
- *Journal of High Energy Physics (JHEP)*,
- *Physical Review D*,
- *Physics Letters B*

FUNDING AGENCIES for which I act as Referee:

- *Austrian Science Fund (FWF)*, Austria
- *Czech Academy of Science (CAS)*, Czech Republic
- *Danish Council for Independent Research*, Denmark
- *Deutsche Forschungsgemeinschaft (DFG)*, Germany
- *European Research Council (ERC)*, EU
- *German-Israeli Foundation*, Germany-Israel
- *Italian Ministry of University and Research (MIUR)*, Italy
- *Irish Research Council for Science, Engineering and Technology (IRCSET)*, Ireland
- *National Research Foundation (NRF)*, South Africa
- *National Science Foundation (NSF)*, USA
- *Natural Sciences and Engineering Research Council (NSERC)*, Canada
- *Research Research Foundation Flanders (FWO)*, Belgium
- *Research Grants Council Hong Kong (CERG)*, China
- *Science & Technology Facilities Council (STFC)*, United Kingdom
- *Swiss National Science Foundation (SNF)*, Switzerland

BOOKS

- 2013 *Relativistic Hydrodynamics*
 L. Rezzolla, O. Zanotti, Oxford University Press
- 2010 Editor of the Special Issue *MICRA2009*
 C. Ott, C. Pethick, and **L. Rezzolla**, *Class. Quantum Grav.* 27 (2010) 110302
- 2007 Editor of the Special Issue *New Frontiers in Numerical Relativity*
 M. Campanelli and **L. Rezzolla**, *Class. Quantum Grav.* 24 (2007) S1-S379
- 2001 Editor of the Proceedings Book *Gravitational Waves: A Challenge to Theoretical Astrophysics*
 V. Ferrari, J. C. Miller and **L. Rezzolla**, ICTP Lecture Series, Vol. 3, ISBN 92-95003-05-5

Research Grants

- 2013 ERC Synergy Grant, “BlackHoleCam”.
Total budget: **14,000.000 EUR** over six years.
- 2013 ESF COST Action, “NewCompStar”.
Total budget: **600.000 EUR** over four years.
- 2010 DFG Grant on gravitational-wave astronomy (SFB-TR7).
Total budget: **480.000 EUR** over four years.
- 2009 Marie Curie Reintegration Grant on Numerical Cosmology (awarded to Dr. E. Bentivegna).
Total budget: **75.000 EUR** over three years
- 2009 MPG Grant to purchase a new a supercomputing cluster.
Total budget: **1,070000.000 EUR** to be spent in 2010
- 2009 Postdoctoral fellowship from the Alexander von Humboldt Foundation (awarded to Dr. J. L. Jaramillo).
Total budget: **30.000 EUR** over one year
- 2008 MPG Grant to upgrade the storage system of the local supercomputing cluster.
Total budget: **120.000 EUR**
- 2007 Postdoctoral fellowship from VESF (Virgo-EGO Scientific Council).
Total budget: **70.000 EUR** over two years
- 2009 Postdoctoral fellowship from the Alexander von Humboldt Foundation (awarded to Dr. C. Chirenti).
Total budget: **30.000 EUR** over one year
- 2006 MPG Grant to purchase a new supercomputing cluster (Damiana).
Total budget: **900.000 EUR** (Damiana ranked 197 in the “top-500” list and the 5th in Germany)
- 2006 Co-PI of *CompStar*, an ESF-funded research network on the physics of compact.
Total budget: **350.000 EUR** over five years
- 2005 DFG Grant DFG on gravitational-wave astronomy (SFB-TR7).
Total budget: **130.000 EUR** over four years.
- 2005 DAAD Collaborative Grant with SISSA, Italy
Total budget: **20.000 EUR** over two years
- 2005 Postdoctoral fellowship from VESF (Virgo-EGO Scientific Council).
Total budget: **70.000 EUR** over two years
- 2005 FVG Grant for the purchase of a supercomputer dedicated to HPC
Total budget: **190.000 EUR**
- 2000 EU TMR Network Grant on *Sources of Gravitational Waves* (with J. Miller)
Total budget: **90.000 EUR** over three years
- 2001 INFN Grant on *Physics and Sources of Gravitational Waves* (OG51)
Total budget: **100.000 EUR** over 5 years
- 2004 Italian MIUR Grant on *Numerical Simulations of Gravitational Wave Sources* (with J. Miller)
Total budget: **70.000 EUR** over two years
- 2000 Italian MIUR Grant on *Computational Physics on Parallel Computers*
Total budget: **70.000 EUR** over two years
- 1999 Italian MIUR Grant on *Astrophysics of Compact Objects* (with J. Miller)
Total budget: **70.000 EUR** over two years

When considered as a whole, these funds amount to a total budget of \sim **3.9 Million EUR** over 10 years.

In addition to financial support for my research, over the last 10 years I have regularly applied and obtained computing time at supercomputer facilities in Italy, Germany and the USA. Overall, these requests amount to more than **30 Million h** for an estimated economical value of \sim **1.3 Million EUR**.

Teaching Experience and Courses Given

Over the years I have taught a variety of subjects at different levels. These range from more analytic courses (such as General Relativity, Advanced General Relativity, Astrophysics of Compact Objects, Astrophysical Relativity) to more computationally oriented ones (such as Numerical Methods for Astrophysics, Numerical Analysis of Hyperbolic and Parabolic Equations, Introduction to Numerical Relativity). Below is the complete list. At the moment, my teaching is mostly concentrated on the graduate courses given for the students of the International Max-Planck Research School (IMPRS) on gravitational-wave astronomy, as well as to specialized Summer and Winter Schools.

FULL COURSES

- 2014 – 2015 *Hydrodynamics and Magnetohydrodynamics*, Undergraduate Course, ITP Frankfurt (Winter Semester)
- 2014 – 2014 *Numerical Relativity*, Undergraduate Course, ITP Frankfurt (Summer Semester)
- 1999 – 2007 *Numerical Methods for Astrophysics*, Graduate Course, SISSA, Trieste (Italy)
- 1999 – 2005 *Astrophysical Applications of General Relativity*, Graduate Course, SISSA, Trieste
- 2005 *Numerical Analysis of First-order Hyperbolic Equations*, Undergraduate Course at Peking University, Beijing (China)
- 1999 – 2004 *Introduction to General Relativity*, Graduate Course at SISSA, Trieste
- 2003 *Numerical Methods for the Solution of Partial Differential Equations*, Graduate Course at the Dept. of Physics, University of Rome “La Sapienza”
- 2003 *Numerical Methods in Astrophysics*, Graduate Course, Silesian Opava University, Czech Republic
- 1998 *Applications of General Relativity* (Physics 498 GR2), Graduate Course at the Univ. of Illinois at Urbana, USA (with Prof. S. Shapiro)
- 1997 *General Relativity* (Physics 498 GR1), Undergraduate Course at the Univ. of Illinois at Urbana, USA (with Prof. S. Shapiro)

SERIES OF LECTURES AT SCHOOLS

- Apr. 2013 *Modelling black hole binaries*, VESF International School, Monte Porzio, Italy
- Mar. 2013 *Introduction to numerical relativity*, IMPRS graduate course, Spreewald, Germany
- Mar. 2012 *Advanced general relativity: Compact Objects*, Ferienkurs (spring-break course), AEI
- May 2012 *Theoretical foundations of astrophysical black holes*, XI SIGRAV International School, Como, Italy
- Feb. 2012 *Introduction to general relativity*, IMPRS graduate course, Germany
- Mar. 2011 *Advanced general relativity: Compact Objects*, Ferienkurs (spring-break course), AEI
- Feb. 2011 *Introduction to general relativity*, IMPRS graduate course, Erkner
- Mar. 2010 *Modelling sources of gravitational waves*, Ferienkurs (spring-break course), AEI
- Mar. 2010 *Numerical Methods in General Relativity*, IMPRS graduate course, Wandlitz, Germany
- Feb. 2010 *Solution of hyperbolic partial differential equations*, Course given at the CompStar Winter School Computational Astrophysics, Caen, France
- Mar. 2009 *Introduction to numerical relativity*, Ferienkurs (spring-break course), AEI
- Nov. 2008 *Introduction to numerical relativity*, IMPRS graduate course, Wandlitz
- Jun. 2008 *Modelling of relativistic compact binaries*, School “Frontiers in Numerical Gravitational Astrophysics, Erice, Italy
- Aug. 2007 *Numerical Methods for the solution of PDEs and modelling of GW sources*,

- Doctoral Training Programme, ECT*, Trento (Italy)
- Jun. 2007 *Modelling Sources of Gravitational Waves*, XLVII Cracow School of Theoretical Phys., Zakopane (Poland)
- Mar. 2007 *Introduction to numerical relativity*, Ferienkurs (spring-break course), AEI
- Jan. 2007 *Numerical Methods for the solution of evolution PDEs*, TIARA Winter School, Taipei (Taiwan)
- Mar. 2006 *Gravitational Collapse*, Ferienkurs, AEI
- Oct. 2004 *An Introduction to Magnetic Fields in Neutron Stars*, Advanced School of the 7th SFB/TR, Golm
- Jul. 2004 *Periodic Sources of Gravitational Waves, An Introduction to Gravitational Collapse to Black Holes*
Villa Mondragone International School of Gravitation and Cosmology, Frascati, Italy
- May 2004 *Linearized Einstein equations*, Virgo-SIGRAV School on Gravitational Waves, Cascina, Italy
- Sep. 2003 *Numerical Analysis of First-order Hyperbolic Equations*,
Advanced School on Sources of Gravitational Waves, Trieste, Italy
- Jul. 2002 *Black holes, Neutron Stars and Gravitational Waves*,
ICTP Summer School on Astroparticle Physics, Trieste, Italy

Graduate and Undergraduate Studies Advisees

Laurea-Diplom (MSc) Students:

- 1999–2000, *Ilia Musco*, University of Trieste (with J. C. Miller)
- 2001–2002, *Erica Bisesi*, University of Trieste (with G. Barbiellini)
- 2001–2002, *Bruno Giacomazzo*, University of Parma (with E. Onofri)
- 2003–2004, *Luca Naso*, University of Catania (with A. Bonanno)
- 2004–2005, *Gregor Leiler*, University of Udine
- 2007–2008, *Michael Jasiulek*, von Humboldt University, Berlin
- 2007–2008, *Filippo Galeazzi*, University of Padua, Italy
- 2007–2008, *Philipp Möesta*, University of Kassel
- 2008–2009, *David Link*, von Humboldt University, Berlin
- 2008–2009, *David Radice*, Politecnico di Milano, University of Milano (with G. Magli)

Ph.D. Students:

- 1999–2002, *Olindo Zanotti*, SISSA; now researcher at Trento Univ., Italy
- 2000–2004, *Luca Baiotti*, SISSA; now Ass. Prof. at Osaka Univ., Japan
- 2000–2004, *Pedro Montero-Muriel*, SISSA (with J. Miller); now postdoc at Garching, Germany
- 2002–2005, *Bruno Giacomazzo*, SISSA; now postdoc at NASA/Goddard, USA
- 2004–2008, *Enrico Barausse*, SISSA; now postdoc at Univ. of Maryland, USA
- 2005–2009, *Ernazar Abdikamalov*, SISSA (with J. Miller); now postdoc at Louisiana Univ., USA
- 2006–2010, *Christian Reisswig*, AEI; now Einstein Fellow at Caltech, USA
- 2006–2010, *Jennifer Seiler*, AEI; now postdoc at NASA/Goddard, USA
- 2009–2012, *Philipp Moesta*, AEI; now postdoc at Caltech, USA
- 2005–2012, *Thorsten Kellermann*, AEI; now consultant in private company, Munich, Germany
- 2010–2013, *David Radice*, AEI; now Prize Fellow at Caltech, USA.
- 2008–2014, *Filippo Galeazzi*, AEI
- 2009–2014, *Kyriaki Dionysopoulou*, AEI

Publications on Refereed Journals

References

- [1] K. Takami, **L. Rezzolla**, and L. Baiotti. *Constraining the Equation of State of Neutron Stars from Binary Mergers*. Physical Review Letters, 113 091104, (2014).
- [2] T. Damour, F. Guercilena, I. Hinder, S. Hopper, A. Nagar, and **L. Rezzolla**. *Strong-field scattering of two black holes: Numerics versus analytics*. Phys. Rev. D, 89 081503, (2014).
- [3] D. M. Siegel, R. Ciolfi, and **L. Rezzolla**. *Magnetically Driven Winds from Differentially Rotating Neutron Stars and X-Ray Afterglows of Short Gamma-Ray Bursts*. Astrophys. J., Lett., 785 L6, (2014).
- [4] V. S. Morozova, **L. Rezzolla**, and B. J. Ahmedov. *Nonsingular electrodynamics of a rotating black hole moving in an asymptotically uniform magnetic test field*. Phys. Rev. D, 89 104030, (2014).
- [5] D. Radice, **L. Rezzolla**, and F. Galeazzi. *High-order fully general-relativistic hydrodynamics: new approaches and tests*. Classical and Quantum Gravity, 31 075012, (2014).
- [6] **L. Rezzolla** and A. Zhidenko. *New parametrization for spherically symmetric black holes in metric theories of gravity*. Phys. Rev. D, 90 084009, (2014).
- [7] B. Haskell, R. Ciolfi, F. Pannarale, and **L. Rezzolla**. *On the universality of I -Love- Q relations in magnetized neutron stars*. Mon. Not. R. Astron. Soc. , 438 L71–L75, (2014).
- [8] D. Radice, **L. Rezzolla**, and F. Galeazzi. *Beyond second-order convergence in simulations of binary neutron stars in full general relativity*. Mon. Not. R. Astron. Soc. , 437 L46–L50, (2014).
- [9] D. M. Siegel, R. Ciolfi, and **L. Rezzolla**. *Magnetically driven winds from differentially rotating neutron stars and X-ray afterglows of short gamma-ray bursts*. ArXiv e-prints, (2014).
- [10] D. Radice, **L. Rezzolla**, and F. Galeazzi. *High-Order Fully General-Relativistic Hydrodynamics: new Approaches and Tests*. ArXiv e-prints, (2013).
- [11] C. Messenger, K. Takami, S. Gossan, **L. Rezzolla**, and B. S. Sathyaprakash. *Host redshifts from gravitational-wave observations of binary neutron star mergers*. ArXiv e-prints, (2013).
- [12] L. Franci, R. De Pietri, K. Dionysopoulou, and **L. Rezzolla**. *Dynamical bar-mode instability in rotating and magnetized relativistic stars*. Phys. Rev. D, 88 104028, (2013).
- [13] V. S. Morozova, **L. Rezzolla**, and B. J. Ahmedov. *Nonsingular electrodynamics of a rotating black hole boosted in an asymptotically uniform magnetic test field*. ArXiv e-prints, (2013).
- [14] D. Alic, W. Kastaun, and **L. Rezzolla**. *Constraint damping of the conformal and covariant formulation of the Z4 system in simulations of binary neutron stars*. Phys. Rev. D, 88 064049, (2013).
- [15] F. Galeazzi, W. Kastaun, **L. Rezzolla**, and J. A. Font. *Implementation of a simplified approach to radiative transfer in general relativity*. Phys. Rev. D, 88 064009, (2013).
- [16] J. S. Read, L. Baiotti, J. D. E. Creighton, J. L. Friedman, B. Giacomazzo, K. Kyutoku, C. Markakis, **L. Rezzolla**, M. Shibata, and K. Taniguchi. *Matter effects on binary neutron star waveforms*. Phys. Rev. D, 88 044042, (2013).

- [17] K. Dionysopoulou, D. Alic, C. Palenzuela, **L. Rezzolla**, and B. Giacomazzo. *General-relativistic resistive magnetohydrodynamics in three dimensions: Formulation and tests*. Phys. Rev. D, 88 044020, (2013).
- [18] R. Ciolfi and **L. Rezzolla**. *Twisted-torus configurations with large toroidal magnetic fields in relativistic stars*. Mon. Not. R. Astron. Soc. , 435 L43–L47, (2013).
- [19] W. Kastaun, F. Galeazzi, D. Alic, **L. Rezzolla**, and J. A. Font. *Black hole from merging binary neutron stars: How fast can it spin?* Phys. Rev. D, 88 021501, (2013).
- [20] H. Falcke and **L. Rezzolla**. *Fast radio bursts: the last sign of supramassive neutron stars*. ArXiv e-prints, (2013).
- [21] D. M. Siegel, R. Ciolfi, A. I. Harte, and **L. Rezzolla**. *Magnetorotational instability in relativistic hypermassive neutron stars*. Phys. Rev. D, 87 121302, (2013).
- [22] D. Radice, E. Abdikamalov, **L. Rezzolla**, and C. D. Ott. *A new spherical harmonics scheme for multi-dimensional radiation transport I. Static matter configurations*. Journal of Computational Physics, 242 648–669, (2013).
- [23] D. Radice and **L. Rezzolla**. *Universality and Intermittency in Relativistic Turbulent Flows of a Hot Plasma*. Astrophys. J., Lett., 766 L10, (2013).
- [24] I. Hinder, A. Buonanno, **L. Rezzolla**, et al. *Error-analysis and comparison to analytical models of numerical waveforms produced by the NRAR Collaboration*. Classical and Quantum Gravity, 31 025012, (2013).
- [25] **L. Rezzolla** and K. Takami. *Black-hole production from ultrarelativistic collisions*. Classical and Quantum Gravity, 30 012001, (2013).
- [26] B. Giacomazzo, R. Perna, **L. Rezzolla**, E. Troja, and D. Lazzati. *Compact Binary Progenitors of Short Gamma-Ray Bursts*. Astrophys. J., Lett., 762 L18, (2013).
- [27] J. Frieben and **L. Rezzolla**. *Equilibrium models of relativistic stars with a toroidal magnetic field*. Mon. Not. R. Astron. Soc. , 427 3406–3426, (2012).
- [28] R. Ciolfi and **L. Rezzolla**. *Poloidal-field Instability in Magnetized Relativistic Stars*. Astrophys. J., 760 1, (2012).
- [29] D. Radice and **L. Rezzolla**. *THC: a new high-order finite-difference high-resolution shock-capturing code for special-relativistic hydrodynamics*. Astronomy and Astrophysics, 547 A26, (2012).
- [30] E. Barausse, V. Morozova, and **L. Rezzolla**. *On the Mass Radiated by Coalescing Black Hole Binaries*. Astrophys. J., 758 63, (2012).
- [31] D. Alic, P. Moesta, **L. Rezzolla**, O. Zanotti, and J. L. Jaramillo. *Accurate Simulations of Binary Black Hole Mergers in Force-free Electrodynamics*. Astrophys. J., 754 36, (2012).
- [32] J. L. Jaramillo, R. P. Macedo, P. Moesta, and **L. Rezzolla**. *Black-hole horizons as probes of black-hole dynamics. II. Geometrical insights*. Phys. Rev. D, 85 084031, (2012).
- [33] J. L. Jaramillo, R. P. Macedo, P. Moesta, and **L. Rezzolla**. *Black-hole horizons as probes of black-hole dynamics. I. Post-merger recoil in head-on collisions*. Phys. Rev. D, 85 084030, (2012).
- [34] P. Moesta, D. Alic, **L. Rezzolla**, O. Zanotti, and C. Palenzuela. *On the Detectability of Dual Jets from Binary Black Holes*. Astrophys. J., Lett., 749 L32, (2012).

- [35] D. Alic, C. Bona-Casas, C. Bona, **L. Rezzolla**, and C. Palenzuela. *Conformal and covariant formulation of the Z4 system with constraint-violation damping*. Phys. Rev. D, 85 064040, (2012).
- [36] F. Pannarale, **L. Rezzolla**, F. Ohme, and J. S. Read. *Will black hole-neutron star binary inspirals tell us about the neutron star equation of state?* Phys. Rev. D, 84 104017, (2011).
- [37] O. Zanotti, C. Roedig, **L. Rezzolla**, and L. Del Zanna. *General relativistic radiation hydrodynamics of accretion flows - I. Bondi-Hoyle accretion*. Mon. Not. R. Astron. Soc. , 417 2899–2915, (2011).
- [38] K. Takami, **L. Rezzolla**, and S. Yoshida. *A quasi-radial stability criterion for rotating relativistic stars*. Mon. Not. R. Astron. Soc. , 416 L1–L5, (2011).
- [39] B. Sathyaprakash, M. Abernathy, **L. Rezzolla**, et al. *Scientific Potential of Einstein Telescope*. ArXiv e-prints, (2011).
- [40] B. Giacomazzo, **L. Rezzolla**, and N. Stergioulas. *Collapse of differentially rotating neutron stars and cosmic censorship*. Phys. Rev. D, 84 024022, (2011).
- [41] L. Baiotti, T. Damour, B. Giacomazzo, A. Nagar, and **L. Rezzolla**. *Accurate numerical simulations of inspiralling binary neutron stars and their comparison with effective-one-body analytical models*. Phys. Rev. D, 84 024017, (2011).
- [42] D. Radice and **L. Rezzolla**. *Discontinuous Galerkin methods for general-relativistic hydrodynamics: Formulation and application to spherically symmetric spacetimes*. Phys. Rev. D, 84 024010, (2011).
- [43] R. Ciolfi, S. K. Lander, G. M. Manca, and **L. Rezzolla**. *Instability-driven Evolution of Poloidal Magnetic Fields in Relativistic Stars*. Astrophys. J., Lett., 736 L6, (2011).
- [44] **L. Rezzolla**, B. Giacomazzo, L. Baiotti, J. Granot, C. Kouveliotou, and M. A. Aloy. *The Missing Link: Merging Neutron Stars Naturally Produce Jet-like Structures and Can Power Short Gamma-ray Bursts*. Astrophys. J., Lett., 732 L6, (2011).
- [45] O. Dönmez, O. Zanotti, and **L. Rezzolla**. *On the development of quasi-periodic oscillations in Bondi-Hoyle accretion flows*. Mon. Not. R. Astron. Soc. , 412 1659–1668, (2011).
- [46] M. Thierfelder, S. Bernuzzi, D. Hilditch, B. Brügmann, and **L. Rezzolla**. *Trumpet solution from spherical gravitational collapse with puncture gauges*. Phys. Rev. D, 83 064022, (2011).
- [47] B. Giacomazzo, **L. Rezzolla**, and L. Baiotti. *Accurate evolutions of inspiralling and magnetized neutron stars: Equal-mass binaries*. Phys. Rev. D, 83 044014, (2011).
- [48] N. Andersson, V. Ferrari, D. I. Jones, K. D. Kokkotas, B. Krishnan, J. S. Read, **L. Rezzolla**, and B. Zink. *Gravitational waves from neutron stars: promises and challenges*. General Relativity and Gravitation, 43 409–436, (2011).
- [49] F. Pannarale, A. Tonita, and **L. Rezzolla**. *Black Hole-Neutron Star Mergers and Short Gamma-ray Bursts: A Relativistic Toy Model to Estimate the Mass of the Torus*. Astrophys. J., 727 95, (2011).
- [50] L. Baiotti, T. Damour, B. Giacomazzo, A. Nagar, and **L. Rezzolla**. *Analytic Modeling of Tidal Effects in the Relativistic Inspiral of Binary Neutron Stars*. Physical Review Letters, 105 261101, (2010).
- [51] D. Alic, **L. Rezzolla**, I. Hinder, and P. Mösta. *Dynamical damping terms for symmetry-seeking shift conditions*. Classical and Quantum Gravity, 27 245023, (2010).
- [52] T. Kellerman, **L. Rezzolla**, and D. Radice. *Critical phenomena in neutron stars: II. Head-on collisions*. Classical and Quantum Gravity, 27 235016, (2010).

- [53] D. Radice, **L. Rezzolla**, and T. Kellerman. *Critical phenomena in neutron stars: I. Linearly unstable nonrotating models*. *Classical and Quantum Gravity*, 27 235015, (2010).
- [54] P. Amaro-Seoane, J. Barranco, A. Bernal, and **L. Rezzolla**. *Constraining scalar fields with stellar kinematics and collisional dark matter*. *JCAP*, 11 2, (2010).
- [55] O. Zanotti, **L. Rezzolla**, L. Del Zanna, and C. Palenzuela. *Electromagnetic counterparts of recoiling black holes: general relativistic simulations of non-Keplerian discs*. *Astronomy and Astrophysics*, 523 A8, (2010).
- [56] M. Punturo, , M. Abernathy, **L. Rezzolla**, et al. *The Einstein Telescope: a third-generation gravitational wave observatory*. *Classical and Quantum Gravity*, 27 194002, (2010).
- [57] N. Andersson, V. Ferrari, D. I. Jones, K. D. Kokkotas, B. Krishnan, J. S. Read, **L. Rezzolla**, and B. Zink. *Gravitational waves from neutron stars: promises and challenges*. *General Relativity and Gravitation*, 156, (2010).
- [58] **L. Rezzolla**, R. P. Macedo, and J. L. Jaramillo. *Understanding the “Antikick” in the Merger of Binary Black Holes*. *Phys. Rev. Lett.*, 104 221101, (2010).
- [59] **L. Rezzolla**, L. Baiotti, B. Giacomazzo, D. Link, and J. A. Font. *Accurate evolutions of unequal-mass neutron-star binaries: properties of the torus and short GRB engines*. *Classical and Quantum Gravity*, 27 114105, (2010).
- [60] G. Corvino, **L. Rezzolla**, S. Bernuzzi, R. De Pietri, and B. Giacomazzo. *On the shear instability in relativistic neutron stars*. *Classical and Quantum Gravity*, 27 114104, (2010).
- [61] M. Punturo et al. *The third generation of gravitational wave observatories and their science reach*. *Classical and Quantum Gravity*, 27 084007, (2010).
- [62] P. Mösta, C. Palenzuela, **L. Rezzolla**, L. Lehner, S. Yoshida, and D. Pollney. *Vacuum electromagnetic counterparts of binary black-hole mergers*. *Phys. Rev. D*, 81 064017, (2010).
- [63] E. B. Abdikamalov, C. D. Ott, **L. Rezzolla**, L. Dessart, H. Dimmelmeier, A. Marek, and H.-T. Janka. *Axisymmetric general relativistic simulations of the accretion-induced collapse of white dwarfs*. *Phys. Rev. D*, 81 044012, (2010).
- [64] C. Reisswig, S. Husa, **L. Rezzolla**, E. N. Dorband, D. Pollney, and J. Seiler. *Gravitational-wave detectability of equal-mass black-hole binaries with aligned spins*. *Phys. Rev. D*, 80 124026, (2009).
- [65] B. Giacomazzo, **L. Rezzolla**, and L. Baiotti. *Can magnetic fields be detected during the inspiral of binary neutron stars?* *Mon. Not. R. Astron. Soc.*, 399 L164–L168, (2009).
- [66] E. Barausse and **L. Rezzolla**. *Predicting the Direction of the Final Spin from the Coalescence of Two Black Holes*. *Astrophys. J., Lett.*, 704 L40–L44, (2009).
- [67] B. Aylott et al. *Testing gravitational-wave searches with numerical relativity waveforms: results from the first Numerical INjection Analysis (NINJA) project*. *Classical and Quantum Gravity*, 26 165008, (2009).
- [68] P. Ajith, S. Babak, Y. Chen, M. Hewitson, B. Krishnan, A. M. Sintes, J. T. Whelan, B. Brügmann, P. Diener, N. Dorband, J. Gonzalez, M. Hannam, S. Husa, D. Pollney, **L. Rezzolla**, L. Santamaría, U. Sperhake, and J. Thornburg. *Erratum: Template bank for gravitational waveforms from coalescing binary black holes: Nonspinning binaries*. *Phys. Rev. D*, 79 129901, (2009).
- [69] L. Cadonati et al. *Status of NINJA: the Numerical INjection Analysis project*. *Classical and Quantum Gravity*, 26 114008, (2009).

- [70] L. Baiotti, B. Giacomazzo, and **L. Rezzolla**. *Accurate evolutions of inspiralling neutron-star binaries: assessment of the truncation error*. *Classical and Quantum Gravity*, 26 114005, (2009).
- [71] **L. Rezzolla**. *Modelling the final state from binary black-hole coalescences*. *Classical and Quantum Gravity*, 26 094023, (2009).
- [72] C. Palenzuela, L. Lehner, O. Reula, and **L. Rezzolla**. *Beyond ideal MHD: towards a more realistic modelling of relativistic astrophysical plasmas*. *Mon. Not. R. Astron. Soc.*, 394 1727–1740, (2009).
- [73] E. B. Abdikamalov, H. Dimmelmeier, **L. Rezzolla**, and J. C. Miller. *Relativistic simulations of the phase-transition-induced collapse of neutron stars*. *Mon. Not. R. Astron. Soc.*, 392 52–76, (2009).
- [74] T. Kellerman, L. Baiotti, B. Giacomazzo, and **L. Rezzolla**. *An improved formulation of the relativistic hydrodynamics equations in 2D Cartesian coordinates*. *Classical and Quantum Gravity*, 25 225007, (2008).
- [75] L. Baiotti, B. Giacomazzo, and **L. Rezzolla**. *Accurate evolutions of inspiralling neutron-star binaries: Prompt and delayed collapse to a black hole*. *Phys. Rev. D*, 78 084033, (2008).
- [76] C. B. M. H. Chirenti and **L. Rezzolla**. *Ergoregion instability in rotating gravastars*. *Phys. Rev. D*, 78 084011, (2008).
- [77] J. Seiler, B. Szilágyi, D. Pollney, and **L. Rezzolla**. *Constraint-preserving boundary treatment for a harmonic formulation of the Einstein equations*. *Classical and Quantum Gravity*, 25 175020, (2008).
- [78] **L. Rezzolla**, E. Barausse, E. N. Dorband, D. Pollney, C. Reisswig, J. Seiler, and S. Husa. *Final spin from the coalescence of two black holes*. *Phys. Rev. D*, 78 044002, (2008).
- [79] **L. Rezzolla**, E. N. Dorband, C. Reisswig, P. Diener, D. Pollney, E. Schnetter, and B. Szilágyi. *Spin Diagrams for Equal-Mass Black Hole Binaries with Aligned Spins*. *Astrophys. J.*, 679 1422–1426, (2008).
- [80] E. Barausse and **L. Rezzolla**. *Influence of the hydrodynamic drag from an accretion torus on extreme mass-ratio inspirals*. *Phys. Rev. D*, 77 104027, (2008).
- [81] P. Ajith, S. Babak, Y. Chen, M. Hewitson, B. Krishnan, A. M. Sintes, J. T. Whelan, B. Brügmann, P. Diener, N. Dorband, J. Gonzalez, M. Hannam, S. Husa, D. Pollney, **L. Rezzolla**, L. Santamaría, U. Sperhake, and J. Thornburg. *Template bank for gravitational waveforms from coalescing binary black holes: Nonspinning binaries*. *Phys. Rev. D*, 77 104017, (2008).
- [82] T. Damour, A. Nagar, E. N. Dorband, D. Pollney, and **L. Rezzolla**. *Faithful effective-one-body waveforms of equal-mass coalescing black-hole binaries*. *Phys. Rev. D*, 77 084017, (2008).
- [83] **L. Rezzolla**, P. Diener, E. N. Dorband, D. Pollney, C. Reisswig, E. Schnetter, and J. Seiler. *The Final Spin from the Coalescence of Aligned-Spin Black Hole Binaries*. *Astrophys. J., Lett.*, 674 L29–L32, (2008).
- [84] L. Naso, **L. Rezzolla**, A. Bonanno, and L. Paternò. *Magnetic field amplification in proto-neutron stars. The role of the neutron-finger instability for dynamo excitation*. *Astronomy and Astrophysics*, 479 167–176, (2008).
- [85] D. Pollney, C. Reisswig, **L. Rezzolla**, B. Szilágyi, M. Ansorg, B. Deris, P. Diener, E. N. Dorband, M. Koppitz, A. Nagar, and E. Schnetter. *Recoil velocities from equal-mass binary black-hole mergers: A systematic investigation of spin-orbit aligned configurations*. *Phys. Rev. D*, 76 124002, (2007).
- [86] P. Ajith, S. Babak, Y. Chen, M. Hewitson, B. Krishnan, J. T. Whelan, B. Brügmann, P. Diener, J. Gonzalez, M. Hannam, S. Husa, M. Koppitz, D. Pollney, **L. Rezzolla**, L. Santamaría, A. M. Sintes, U. Sperhake, and J. Thornburg. *A phenomenological template family for black-hole coalescence waveforms*. *Classical and Quantum Gravity*, 24 689, (2007).

- [87] E. Barausse, S. A. Hughes, and **L. Rezzolla**. *Circular and noncircular nearly horizon-skimming orbits in Kerr spacetimes*. Phys. Rev. D, 76 044007, (2007).
- [88] C. B. M. H. Chirenti and **L. Rezzolla**. *How to tell a gravastar from a black hole*. Classical and Quantum Gravity, 24 4191–4206, (2007).
- [89] M. Koppitz, D. Pollney, C. Reisswig, **L. Rezzolla**, J. Thornburg, P. Diener, and E. Schnetter. *Recoil Velocities from Equal-Mass Binary-Black-Hole Mergers*. Phys. Rev. Lett., 99 041102, (2007).
- [90] P. J. Montero, O. Zanotti, J. A. Font, and **L. Rezzolla**. *Dynamics of magnetized relativistic tori oscillating around black holes*. Mon. Not. R. Astron. Soc. , 378 1101–1110, (2007).
- [91] B. Szilágyi, D. Pollney, **L. Rezzolla**, J. Thornburg, and J. Winicour. *An explicit harmonic code for black-hole evolution using excision*. Classical and Quantum Gravity, 24 275, (2007).
- [92] B. Giacomazzo and **L. Rezzolla**. *WhiskyMHD: a new numerical code for general relativistic magnetohydrodynamics*. Classical and Quantum Gravity, 24 235, (2007).
- [93] L. Baiotti, I. Hawke, and **L. Rezzolla**. *On the gravitational radiation from the collapse of neutron stars to rotating black holes*. Classical and Quantum Gravity, 24 187, (2007).
- [94] G. M. Manca, L. Baiotti, R. DePietri, and **L. Rezzolla**. *Dynamical non-axisymmetric instabilities in rotating relativistic stars*. Classical and Quantum Gravity, 24 171, (2007).
- [95] P. J. Montero, J. A. Font, **L. Rezzolla**, and O. Zanotti. *Dynamics of oscillating magnetized relativistic tori around a Schwarzschild black hole*. Journal of Physics Conference Series, 66 012061, (2007).
- [96] L. Baiotti, I. Hawke, **L. Rezzolla**, and E. Schnetter. *Details on the gravitational-wave emission from rotating gravitational collapse in 3D*. Journal of Physics Conference Series, 66 012045, (2007).
- [97] E. Barausse, **L. Rezzolla**, D. Petroff, and M. Ansorg. *Gravitational waves from extreme mass ratio inspirals in nonpure Kerr spacetimes*. Phys. Rev. D, 75 064026, (2007).
- [98] L. Baiotti, R. de Pietri, G. M. Manca, and **L. Rezzolla**. *Accurate simulations of the dynamical bar-mode instability in full general relativity*. Phys. Rev. D, 75 044023, (2007).
- [99] A. Nagar, O. Zanotti, J. A. Font, and **L. Rezzolla**. *Accretion-induced quasinormal mode excitation of a Schwarzschild black hole*. Phys. Rev. D, 75 044016, (2007).
- [100] J. Thornburg, P. Diener, D. Pollney, **L. Rezzolla**, E. Schnetter, E. Seidel, and R. Takahashi. *Are moving punctures equivalent to moving black holes?* Class. Quantum Grav., 24 3911, 2007.
- [101] F. Löffler, **L. Rezzolla**, and M. Ansorg. *Numerical evolutions of a black hole-neutron star system in full general relativity: Head-on collision*. Phys. Rev. D, 74 104018, (2006).
- [102] L. Baiotti and **L. Rezzolla**. *Challenging the Paradigm of Singularity Excision in Gravitational Collapse*. Phys. Rev. Lett., 97 141101, (2006).
- [103] B. Giacomazzo and **L. Rezzolla**. *The exact solution of the Riemann problem in relativistic magnetohydrodynamics*. Journal of Fluid Mechanics, 562 223–259, (2006).
- [104] V. Ferrari, L. Gualtieri, and **L. Rezzolla**. *Hybrid approach to black hole perturbations from extended matter sources*. Phys. Rev. D, 73 124028, (2006).
- [105] A. Nagar and **L. Rezzolla**. *Corrigendum: Gauge-invariant non-spherical metric perturbations of Schwarzschild black-hole spacetimes*. Classical and Quantum Gravity, 23 4297, (2006).

- [106] M. A. Aloy and **L. Rezzolla**. *A Powerful Hydrodynamic Booster for Relativistic Jets*. *Astrophys. J., Lett.*, 640 L115–L118, (2006).
- [107] G. Leiler and **L. Rezzolla**. *Iterated Crank-Nicolson method for hyperbolic and parabolic equations in numerical relativity*. *Phys. Rev. D*, 73 044001, (2006).
- [108] J. D. Schnittman and **L. Rezzolla**. *Quasi-periodic Oscillations in the X-Ray Light Curves from Relativistic Tori*. *Astrophys. J., Lett.*, 637 L113–L116, (2006).
- [109] A. Nagar and **L. Rezzolla**. *Topical Review: Gauge-invariant non-spherical metric perturbations of Schwarzschild black-hole spacetimes*. *Classical and Quantum Gravity*, 22 167, (2005).
- [110] I. Hawke, L. Baiotti, **L. Rezzolla**, and E. Schnetter. *Gravitational waves from the 3D collapse of a neutron star to a Kerr black hole*. *Computer Physics Communications*, 169 374–377, (2005).
- [111] L. Baiotti, I. Hawke, **L. Rezzolla**, and E. Schnetter. *Gravitational-Wave Emission from Rotating Gravitational Collapse in Three Dimensions*. *Phys. Rev. Lett.*, 94 131101, (2005).
- [112] I. Musco, J. C. Miller, and **L. Rezzolla**. *Computations of primordial black-hole formation*. *Classical and Quantum Gravity*, 22 1405–1424, (2005).
- [113] O. Zanotti, J. A. Font, **L. Rezzolla**, and P. J. Montero. *Dynamics of oscillating relativistic tori around Kerr black holes*. *Mon. Not. R. Astron. Soc.*, 356 1371–1382, (2005).
- [114] L. Baiotti, I. Hawke, P. J. Montero, F. Löffler, **L. Rezzolla**, N. Stergioulas, J. A. Font, and E. Seidel. *Three-dimensional relativistic simulations of rotating neutron-star collapse to a Kerr black hole*. *Phys. Rev. D*, 71 024035, (2005).
- [115] L. Baiotti, I. Hawke, P. J. Montero, F. L. Löffler, **L. Rezzolla**, N. Stergioulas, J. A. Font, and E. Seidel. *3-D collapse of rotating stars to Kerr black holes*. *Journal of Physics Conference Series*, 8 86–95, (2005).
- [116] P. J. Montero, **L. Rezzolla**, and S. Yoshida. *Oscillations of vertically integrated relativistic tori - II. Axisymmetric modes in a Kerr space-time*. *Mon. Not. R. Astron. Soc.*, 354 1040–1052, (2004).
- [117] **L. Rezzolla** and B. J. Ahmedov. *Electromagnetic fields in the exterior of an oscillating relativistic star - I. General expressions and application to a rotating magnetic dipole*. *Mon. Not. R. Astron. Soc.*, 352 1161–1179, (2004).
- [118] **L. Rezzolla**, O. Zanotti, and J. A. Font. *Dynamics of thick discs around Schwarzschild-de Sitter black holes*. *Astronomy and Astrophysics*, 412 603–613, (2003).
- [119] A. Bonanno, **L. Rezzolla**, and V. Urpin. *Mean-field dynamo action in protoneutron stars*. *Astronomy and Astrophysics*, 410 L33–L36, (2003).
- [120] **L. Rezzolla**, S. Yoshida, T. J. Maccarone, and O. Zanotti. *A new simple model for high-frequency quasi-periodic oscillations in black hole candidates*. *Mon. Not. R. Astron. Soc.*, 344 L37–L41, (2003).
- [121] **L. Rezzolla**, S. Yoshida, and O. Zanotti. *Oscillations of vertically integrated relativistic tori - I. Axisymmetric modes in a Schwarzschild space-time*. *Mon. Not. R. Astron. Soc.*, 344 978–992, (2003).
- [122] O. Zanotti, **L. Rezzolla**, and J. A. Font. *Quasi-periodic accretion and gravitational waves from oscillating ‘toroidal neutron stars’ around a Schwarzschild black hole*. *Mon. Not. R. Astron. Soc.*, 341 832–848, (2003).
- [123] **L. Rezzolla**, O. Zanotti, and J. A. Pons. *An improved exact Riemann solver for multi-dimensional relativistic flows*. *Journal of Fluid Mechanics*, 479 199–219, (2003).

- [124] L. Baiotti, I. Hawke, P. J. Montero, and **L. Rezzolla**. *A new three-dimensional general-relativistic hydrodynamics code*. *Memorie della Societa Astronomica Italiana Supplementi*, 1 210, 2003.
- [125] O. Zanotti and **L. Rezzolla**. *Dynamics of Oscillating Relativistic Tori*. *Memorie della Societa Astronomica Italiana Supplementi*, 1 192, 2003.
- [126] **L. Rezzolla** and O. Zanotti. *New Relativistic Effects in the Dynamics of Nonlinear Hydrodynamical Waves*. *Phys. Rev. Lett.*, 89 114501, (2002).
- [127] J. A. Font, T. Goodale, S. Iyer, M. Miller, **L. Rezzolla**, E. Seidel, N. Stergioulas, W.-M. Suen, and M. Tobias. *Three-dimensional numerical general relativistic hydrodynamics. II. Long-term dynamics of single relativistic stars*. *Phys. Rev. D*, 65 084024, (2002).
- [128] O. Zanotti and **L. Rezzolla**. *General relativistic electromagnetic fields of a slowly rotating magnetized neutron star - II. Solution of the induction equations*. *Mon. Not. R. Astron. Soc.*, 331 376–388, (2002).
- [129] S. Yoshida, **L. Rezzolla**, S. Karino, and Y. Eriguchi. *Frequencies of f-Modes in Differentially Rotating Relativistic Stars and Secular Stability Limits*. *Astrophys. J., Lett.*, 568 L41–L44, (2002).
- [130] M. A. Abramowicz, **L. Rezzolla**, and S. Yoshida. *General relativistic Rossby-Haurwitz waves of a slowly and differentially rotating fluid shell*. *Classical and Quantum Gravity*, 19 191–194, (2002).
- [131] **L. Rezzolla** and O. Zanotti. *An improved exact Riemann solver for relativistic hydrodynamics*. *Journal of Fluid Mechanics*, 449 395–411, (2001).
- [132] **L. Rezzolla**, F. K. Lamb, D. Marković, and S. L. Shapiro. *Properties of r modes in rotating magnetic neutron stars. II. Evolution of the r modes and stellar magnetic field*. *Phys. Rev. D*, 64 104014, (2001).
- [133] **L. Rezzolla**, F. K. Lamb, D. Marković, and S. L. Shapiro. *Properties of r modes in rotating magnetic neutron stars. I. Kinematic secular effects and magnetic evolution equations*. *Phys. Rev. D*, 64 104013, (2001).
- [134] **L. Rezzolla**, K. ō. Uryū, and S. Yoshida. *Gravitational wave emission by cataclysmic variables: numerical models of semi-detached binaries*. *Mon. Not. R. Astron. Soc.*, 327 888–894, (2001).
- [135] **L. Rezzolla**, L., B. J. Ahmedov, and J. C. Miller. *Stationary Electromagnetic Fields of a Slowly Rotating Magnetized Neutron Star in General Relativity*. *Found. Phys.*, 31 1051, 2001.
- [136] **L. Rezzolla** and S. Yoshida. *Rossby-Haurwitz waves of a slowly and differentially rotating fluid shell*. *Classical and Quantum Gravity*, 18 L87–L94, (2001).
- [137] **L. Rezzolla**, B. J. Ahmedov, and J. C. Miller. *General relativistic electromagnetic fields of a slowly rotating magnetized neutron star - I. Formulation of the equations*. *Mon. Not. R. Astron. Soc.*, 322 723–740, (2001).
- [138] **L. Rezzolla**, F. K. Lamb, and S. L. Shapiro. *R-Mode Oscillations in Rotating Magnetic Neutron Stars*. *Astrophys. J., Lett.*, 531 L139–L142, (2000).
- [139] **L. Rezzolla**, M. Shibata, H. Asada, T. W. Baumgarte, and S. L. Shapiro. *Constructing a Mass-Current Radiation-Reaction Force for Numerical Simulations*. *Astrophys. J.*, 525 935–949, (1999).
- [140] **L. Rezzolla**, A. M. Abrahams, R. A. Matzner, M. E. Rupright, and S. L. Shapiro. *Cauchy-perturbative matching and outer boundary conditions: Computational studies*. *Phys. Rev. D*, 59 064001, (1999).
- [141] M. E. Rupright, A. M. Abrahams, and **L. Rezzolla**. *Cauchy-perturbative matching and outer boundary conditions: Methods and tests*. *Phys. Rev. D*, 58 044005, (1998).

- [142] R. Gómez et al. *Stable Characteristic Evolution of Generic Three-Dimensional Single-Black-Hole Spacetimes*. Phys. Rev. Lett., 80 3915–3918, (1998).
- [143] G. B. Cook et al. *Boosted Three-Dimensional Black-Hole Evolutions with Singularity Excision*. Phys. Rev. Lett., 80 2512–2516, (1998).
- [144] A. M. Abrahams, **L. Rezzolla**, et al. *Gravitational Wave Extraction and Outer Boundary Conditions by Perturbative Matching*. Phys. Rev. Lett., 80 1812–1815, (1998).
- [145] **L. Rezzolla**, A. M. Abrahams, T. W. Baumgarte, G. B. Cook, M. A. Scheel, S. L. Shapiro, and S. A. Teukolsky. *Waveform propagation in black hole spacetimes: Evaluating the quality of numerical solutions*. Phys. Rev. D, 57 1084–1091, (1998).
- [146] **L. Rezzolla**. *Baryon number segregation at the end of the cosmological quark-hadron transition*. Phys. Rev. D, 54 6072–6082, (1996).
- [147] **L. Rezzolla**. *Stability of cosmological detonation fronts*. Phys. Rev. D, 54 1345–1358, (1996).
- [148] **L. Rezzolla** and J. C. Miller. *Evaporation of cosmological quark drops and relativistic radiative transfer*. Phys. Rev. D, 53 5411–5425, (1996).
- [149] **L. Rezzolla**, J. Miller, and O. Pantano. *Hydrodynamics of quark drops at the end of the cosmological quark-hadron transition*. Astrophysical Letters Communications, 33 33–39, (1996).
- [150] **L. Rezzolla**, J. C. Miller, and O. Pantano. *Evaporation of quark drops during the cosmological quark-hadron transition*. Phys. Rev. D, 52 3202–3213, (1995).
- [151] J. C. Miller and **L. Rezzolla**. *Hydrodynamics of the cosmological quark-hadron transition in the presence of long-range energy and momentum transfer*. Phys. Rev. D, 51 4017–4027, (1995).
- [152] **L. Rezzolla** and J. C. Miller. *Relativistic radiative transfer for spherical flows*. Classical and Quantum Gravity, 11 1815–1832, (1994).

Contributions to Proceedings

References

- [1] L. Franci, R. De Pietri, K. Dionysopoulou, and **L. Rezzolla**. *Bar-mode instability suppression in magnetized relativistic stars*. Journal of Physics Conference Series, 470 012008, (2013).
- [2] R. Ciolfi and L. Rezzolla. *Magnetic Field Instabilities in Neutron Stars*. In J.-U. Ness, editor, *The Fast and the Furious: Energetic Phenomena in Isolated Neutron Stars, Pulsar Wind Nebulae and Supernova Remnants*, (2013).
- [3] D. Radice and L. Rezzolla. *Universality and Intermittency in Relativistic Turbulent Flows of a Hot Gas*. In N. V. Pogorelov, E. Audit, and G. P. Zank, editors, *Numerical Modeling of Space Plasma Flows (ASTRONUM2012)*, volume 474 of *Astronomical Society of the Pacific Conference Series*, pages 25–29, (2013).
- [4] B. Giacomazzo, R. Perna, L. Rezzolla, E. Troja, and D. Lazzati. *Compact Binary Progenitors of Short Gamma-Ray Bursts*. In *APS April Meeting Abstracts*, 8002, (2013).

- [5] M. A. Aloy, L. Rezzolla, B. Giacomazzo, and M. Obergaulinger. Powering Short GRBs by Mergers of Moderately Magnetized Neutron Stars. In N. V. Pogorelov, J. A. Font, E. Audit, and G. P. Zank, editors, *Numerical Modeling of Space Plasma Flows (ASTRONUM 2011)*, volume 459 of *Astronomical Society of the Pacific Conference Series*, 49, (2012).
- [6] L. Rezzolla. Binary Neutron Star Mergers Naturally form Jets that can Power Short Gamma-Ray Bursts. In R. Capuzzo-Dolcetta, M. Limongi, and A. Tornambè, editors, *Advances in Computational Astrophysics: Methods, Tools, and Outcome*, volume 453 of *Astronomical Society of the Pacific Conference Series*, 41, (2012).
- [7] J. L. Jaramillo, R. P. Macedo, P. Moesta, and L. Rezzolla. Towards a cross-correlation approach to strong-field dynamics in black hole spacetimes. In J. Beltrán Jiménez, J. A. Ruiz Cembranos, A. Dobado, A. López Maroto, and A. De la Cruz Dombriz, editors, *American Institute of Physics Conference Series*, volume 1458 of *American Institute of Physics Conference Series*, pages 158–173, (2012).
- [8] P. Moesta, D. Alic, L. Rezzolla, O. Zanotti, and C. Palenzuela. On the detectability of dual jets from binary black holes. In *APS April Meeting Abstracts*, J8001, (2012).
- [9] L. Naso, J. C. Miller, L. Rezzolla, A. Bonanno, and L. Paterno'. Magnetic fields in neutron stars: from interiors to surrounding accretion discs. In J.-U. Ness and M. Ehle, editors, *The X-ray Universe 2011*, 110, (2011).
- [10] B. Giacomazzo, L. Rezzolla, L. Baiotti, D. Link, and J. A. Font. General Relativistic Simulations of Binary Neutron Star Mergers. In J. E. McEnery, J. L. Racusin, and N. Gehrels, editors, *American Institute of Physics Conference Series*, volume 1358 of *American Institute of Physics Conference Series*, pages 187–190, (2011).
- [11] C. Markakis, J. Read, L. Baiotti, J. Creighton, B. Giacomazzo, J. Friedman, L. Rezzolla, M. Shibata, and K. Taniguchi. Material effects in binary neutron star inspiral waveforms. In *APS Meeting Abstracts*, 12005, (2011).
- [12] J. A. Font, L. Rezzolla, B. Giacomazzo, L. Baiotti, and D. Link. *Towards modelling the central engine of short GRBs*. *Journal of Physics Conference Series*, 314 012013, (2011).
- [13] **L. Rezzolla**. Linear and nonlinear dynamics of relativistic tori. In I. Ciufolini, E. Coccia, M. Colpi, V. Gorini, & R. Peron, editor, *Recent Developments in Gravitational Physics*, 225, 2006.
- [14] L. Baiotti, I. Hawke, **L. Rezzolla**, and E. Schnetter. Gravitational Radiation from 3D Collapse to Rotating Black Holes. In A. M. Mourão, M. Pimenta, R. Potting, & P. M. Sá , editor, *New Worlds in Astroparticle Physics: Proceedings of the Fifth International Workshop*, 147, 2006.
- [15] L. Baiotti, I. Hawke, P. J. Montero, F. Löffler, **L. Rezzolla**, N. Stergioulas, J. A. Font, and E. Seidel. Three-dimensional Relativistic Simulations of Rotating Neutron-star Collapse to a Kerr Black Hole. In B. G. Sidharth, F. Honsell, & A. de Angeles, editor, *Frontiers of Fundamental and Computational Physics*, 75, 2006.
- [16] R. de Pietri, L. Baiotti, G. M. Manca, and **L. Rezzolla**. Accurate simulations of the bar mode instability in General Relativity. In L. Mornas & J. Diaz Alonso, editor, *A Century of Relativity Physics: ERE 2005*, volume 841 of *American Institute of Physics Conference Series*, pages 416–419, (2006).
- [17] **L. Rezzolla**. Nonlinear dynamics of thick discs in Schwarzschild-de Sitter spacetimes. In S. Hledík & Z. Stuchlík, editor, *RAGtime 4/5: Workshops on black holes and neutron stars*, pages 151–165, (2004).
- [18] **L. Rezzolla**. A New, Simple Model for Black Hole High Frequency QPOs. In P. Kaaret, F. K. Lamb, & J. H. Swank, editor, *X-ray Timing 2003: Rossi and Beyond*, volume 714 of *American Institute of Physics Conference Series*, pages 36–39, (2004).

- [19] **L. Rezzolla**. The r-modes oscillations and instability: surprises from magnetized neutron stars. In R. Cianci, R. Collina, M. Francaviglia, & P. Fré, editor, *Recent Developments in General Relativity*, pages 235–248, 2002.
- [20] **L. Rezzolla**. Magnetic fields and the r-mode instability. In V. G. Gurzadyan, R. T. Jantzen, & R. Ruffini, editor, *The Ninth Marcel Grossmann Meeting*, pages 2355–2356, 2002.
- [21] **L. Rezzolla**. Secular effects in the r-mode instability and generation of magnetic fields. In S. Hledík & Z. Stuchlík, editor, *RAGtime 2/3: Workshops on Black Holes and Neutron Stars*, pages 103–117, (2001).
- [22] **L. Rezzolla** and O. Zanotti. An Improved Exact Riemann Solver for Relativistic Hydrodynamics. In *The Second National Conference on Astrophysics of Compact Objects*, 54, (2001).
- [23] O. Zanotti and **L. Rezzolla**. General Relativistic Electromagnetic Fields of A Slowly Rotating Magnetized Neutron Star. In *The Second National Conference on Astrophysics of Compact Objects*, 53, (2001).
- [24] **L. Rezzolla**. Gravitational Wave Emission by Cataclysmic Variables and the Minimum Period Puzzle. In *The Second National Conference on Astrophysics of Compact Objects*, 42, (2001).
- [25] **L. Rezzolla**. Three-Dimensional General Relativistic Dynamics of Relativistic Stars. In *The Second National Conference on Astrophysics of Compact Objects*, 41, (2001).
- [26] **L. Rezzolla**. The Role of Differential Rotation in the r Mode Instability. In E. R. Schielicke, editor, *Astronomische Gesellschaft Meeting Abstracts*, volume 18 of *Astronomische Gesellschaft Meeting Abstracts*, pages J505+, 2001.
- [27] D. Markovic, F. K. Lamb, **L. Rezzolla**, and S. L. Shapiro. Decrease of r-mode gravitational radiation as a signal of the onset of superconductivity in newly formed neutron stars. In *Bulletin of the American Astronomical Society*, volume 33 of *Bulletin of the American Astronomical Society*, 822, (2001).
- [28] **L. Rezzolla**. Cauchy-Perturbative Matching and Outer Boundary Conditions. In B. Casciaro, D. Fortunato, M. Francaviglia, & A. Masiello, editor, *Recent Developments in General Relativity*, 205, 2000.
- [29] T. W. Baumgarte, S. A. Hughes, **L. Rezzolla**, S. L. Shapiro, and M. Shibata. Implementing fully relativistic hydrodynamics in three dimensions. In C. P. Burgess & R. C. Myers, editor, *General Relativity and Relativistic Astrophysics*, volume 493 of *American Institute of Physics Conference Series*, pages 53–59, (1999).
- [30] **L. Rezzolla**. Relativistic Radiative Transfer in the Cosmological Quark-Hadron Phase Transition. In M. Carfora, M. Cavaglià, P. Fré, G. Pizzella, C. Reina, & A. Treves, editor, *General Relativity and Gravitational Physics*, 477, 1996.
- [31] **L. Rezzolla** and J. C. Miller. Long-Range Energy and Momentum Transfer in the Quark-Hadron Phase Transition. In F. Occhionero, editor, *Birth of the Universe and Fundamental Physics*, volume 455 of *Lecture Notes in Physics*, Berlin Springer Verlag, 151, 1995.
- [32] **L. Rezzolla** and J. C. Miller. Hydrodynamics of the Cosmological Q-H Transition. In M. Cerdonio, R. D’Auria, M. Francaviglia, & G. Magnano, editor, *General Relativity and Gravitational Physics*, 537, 1994.

Recent Talks at Conferences and Workshops (2008-2011)

Reported below are the contributions to International Conferences and Workshops between 2010 and 2013 only.

- 25.01.2010 *GW emission from binary neutron stars,*
Invited Talk, GWDAW14 Conference, Rome
- 16.02.2010 *Modelling the inspiral and merger of binary neutron stars,*
Invited Talk, CompStar Workshop on Computational Astrophysics Caen, Caen
- 13.04.2010 *Binary black-holes in general (numerical) relativity,*
Invited Talk, 60. Wilhelm and Else Heraeus Seminar: "Black Holes", Bad Honnef
- 31.05.2010 *On the ubiquity of polish doughnuts,*
Invited Talk, A relativistic Whirlwind, ICTP, Trieste,
- 15.06.2010 *Towards a self-consistent modelling of SGRBs,*
Invited Talk, Italian Conference on GRBs, Cefalu
- 02.09.2010 *Synergy between observations and Numerical Relativity in the ET era,*
Invited Talk, Meeting of the ET WG-4, Nice
- 13.09.2010 *Learning from merging binary black holes: waveforms and EM counterparts,*
Invited Talk, LISA Astro-GR Meeting, Paris
- 30.09.2010 *Using NR to explore fundamental physics and astrophysics,*
Invited Talk, SIGRAV International Conference, Pisa
- 10.11.2010 *Modelling sources of gravitational waves,*
Invited Talk, 10th Anniversary of the Hasso-Plattner Institute, Hasso-Plattner Institut, Potsdam
- 15.11.2010 *Simulating BH mergers and their EM emission,*
Invited Talk, ColloquiumST Action Meeting, Valencia
- 24.11.2010 *Understanding Neutron Stars with ET,*
Invited Talk, 3rd ET Annual Workshop, Budapest
- 29.11.2010 *Using NR to explore fundamental physics and astrophysics,*
Invited Talk, MESGW2010, Maresias
- 20.03.2011 *Dynamics of compact-star binarie,*
Invited Talk, Rencontres de Moriond, La Thuile
- 23.03.2011 *Using NR to explore fundamental physics and astrophysics,*
Invited Talk, Spring Meeting of the DPG, Karlsruhe
- 28.03.2011 *GW and EM emission from compact-object binaries in GR,*
Invited Talk, Electromagnetic Astrophysics and Cosmology With Gravitational Waves, Milan
- 03.05.2011 *Modelling binary neutron stars,*
Invited Talk, STARS2011, Havana
- 10.05.2011 *Dynamics of magnetized binaries,*
Invited Talk, CompStar Spring meeting, Catania
- 03.06.2011 *Compact objects and gravitational waves,*
Invited Talk, Rencontres de Blois, Blois
- 13.06.2011 *The missing link: from binary neutron stars to magnetic jets,*
Invited Talk, Astronum-2011 Valencia, Valencia
- 13.06.2011 *The missing link: from binary neutron stars to magnetic jets,*
Invited Talk, Advances in Computational Astrophysics: methods tools and outcomes, Cefalu
- 06.07.2011 *On the Riemann problem in relativistic HD and MHD,*
Invited Talk, Toro 65, Santiago de Compostela
- 07.09.2011 *Jets from merging binaries of compact objects,*
Invited Talk, Workshop on Numerical Relativity and Gravitational Waves 2011, Parma
- 04.06.2012 *Colliding the largest "nuclei" in the universe,*

- 28.06.2012 **Invited Talk**, CompStar Meeting 2012, Tahiti
Using NR to explore fundamental physics and astrophysics,
- 03.07.2012 **Invited Talk**, Einstein in Prague, Prague
EM counterparts from the coalescence of binary black holes,
- 04.07.2012 **Invited Talk**, MG13 Stockholm, Stockholm
Using NR to explore fundamental physics and astrophysics,
- 05.07.2012 **Invited Talk**, MG13 Stockholm, Stockholm
Instability-driven evolution of magnetic fields in relativistic stars,
- 07.08.2012 **Invited Talk**, MG13 Stockholm, Stockholm
Modelling the inspiral and merger of binary neutron stars,
- 12.10.2012 **Invited Talk**, Nuclei in the cosmos Cairns
Binary neutron stars to explore nuclear physics and astrophysics,
- 18.10.2012 **Invited Talk**, EMMI meeting, Tuebingen
Using numerical relativity to explore fundamental physics and astrophysics,
- 21.11.2012 **Invited Talk**, CCP2012, Kobe
Binary neutron stars to explore nuclear physics and astrophysics,
- 19.03.2013 **Invited Talk**, Recent developments in astronuclear and astroparticle physics, Trieste
Black holes in numerical relativity: from astrophysics to particle physics,
- 21.03.2013 **Invited Talk**, COST Action on black holes, CERN, Geneva
Using numerical relativity to explore fundamental physics and astrophysics,
- 15.04.2013 **Invited Talk**, 3rd Iberian Gravitational-wave meeting, Valencia
Strong magnetic fields in relativistic neutron stars,
- 23.04.2013 **Invited Talk**, NS2013, Bonn
Black holes in numerical relativity,
- 08.05.2013 **Invited Talk**, The modern radio Universe 2013, Bonn
Electromagnetic counterparts from binary NSs,
- Invited Talk**, 2013 Multimessenger Transient Astrophysics Workshop, Beijing

Recent Colloquia and Seminars (2010-2013)

Reported below are the Seminars and Colloquia given between 2010 and 2013 only.

- 07.01.2010 *On the binary problem in General Relativity,*
Colloquium, Institut fuer Theoretische Physik und Astrophysik Wuerzburg
- 13.04.2010 *Modelling black-hole binaries in general relativity,*
Colloquium, NASA-GFSC Goddard
- 15.04.2010 *Modelling compact-object binaries in general relativity,*
Colloquium, Naval Research Laboratory, Washington DC
- 16.04.2010 *Modelling the inspiral and merger of binary neutron stars,*
Seminar, Department of Physics, University of Maryland
- 14.07.2010 *The role of the EOS in the modelling of binary neutron stars,*
Seminar, CompStar-EOS Meeting, GSI-Darmstadt
- 17.07.2010 *Towards a self-consistent modelling of SGRBs,*
Colloquium, Jacobs University, Bremen
- 17.09.2010 *Using NR to explore fundamental physics and astrophysics,*
Colloquium, CENTRA, Lisbon

- 04.11.2010 *Using NR to explore fundamental physics and astrophysics,*
Colloquium, IHES, Paris
- 09.11.2010 *Using NR to explore fundamental physics and astrophysics,*
Colloquium, SISSA, Trieste
- 27.01.2011 *Using NR to explore fundamental physics and astrophysics,*
Colloquium, Institute of Theoretical Physics, Jena
- 26.04.2011 *Using NR to explore fundamental physics and astrophysics,*
Colloquium, Institute of Theoretical Physics, Prague
- 26.05.2011 *Binary black hole coalescences in numerical relativity,*
Colloquium, Max-Planck Institute for Radioastronomy, Bonn
- 29.06.2011 *Using NR to explore fundamental physics and astrophysics,*
Colloquium, Albert-Einstein Institute, Hannover
- 30.06.2011 *Modelling the dynamics of binaries in general relativity,*
Colloquium, Carl von Ossietzky Universitaet, Oldenburg
- 14.10.2011 *Using NR to explore fundamental physics and astrophysics,*
Colloquium, School of Physics and Astronomy, Cardiff
- 29.11.2011 *Using NR to explore fundamental physics and astrophysics,*
Colloquium, Humboldt Universitaet Berlin, Berlin
- 15.12.2011 *Using NR to explore fundamental physics and astrophysics,*
Colloquium, Observatoire de Paris, Meudon
- 16.05.2012 *Using NR to explore fundamental physics and astrophysics,*
Colloquium, DESY Hamburg, Hamburg
- 10.10.2012 *Using numerical relativity to explore fundamental physics and astrophysics,*
Colloquium, Physics Dept. La Sapienza, Rome
- 03.12.2012 *Using NR to explore fundamental physics and astrophysics,*
Colloquium, Institute for Theoretical Physics, Zurich
- 10.12.2012 *Using numerical relativity to explore fundamental physics and astrophysics,*
Colloquium, Osservatorio Astronomico Roma, Monte Porzio
- 09.05.2013 *Gravitational and EM emission from binary black holes,*
Seminar, Chinese Academy of Sciences, Beijing

Recent Public Lectures (2010-2013)

Reported below are the Public Lectures given between 2010 and 2013 only.

- 29.07.2010 *Alla scoperta dell'universo di Einstein con buchi neri stelle di neutroni e supercomputers,*
Public Lecture, Sesto, Italy
- 10.07.2010 *Modelling sources of gravitational waves,*
Public Lecture, University of Potsdam, Potsdam
- 14.06.2011 *Alla scoperta dell'universo di Einstein con buchi neri stelle di neutroni e supercomputers,*
Public Lecture, Cefalu'
- 21.02.2012 *Schwarze Löcher und Neutronensterne mit Hilfe von Supercomputern,*
Public Lecture, Olbers Gesellschaft, Bremen
- 24.09.2012 *Discovering Einstein's Universe with Black Holes Neutron Stars and Supercomputers,*
Public Lecture, Italienisches Kulturinstitut, Berlin