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# Bruno Giacomazzo

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## Research Interests

computational astrophysics; binary neutron stars; gamma-ray bursts; black hole binaries; gravitational waves; relativistic magnetohydrodynamics; neutron star collapse; numerical relativity

## Positions

July 2019 - to date:	Associate Professor
<i>Institution:</i>	Department of Physics, University of Milano-Bicocca, Milan, Italy
October 2016 - June 2019:	Associate Professor
<i>Institution:</i>	Department of Physics, University of Trento, Italy
October 2013 - September 2016:	Assistant Professor (tenure-track RTDb contract)
<i>Institution:</i>	Department of Physics, University of Trento, Italy
October 2011 - September 2013:	Research Associate
<i>Institution:</i>	JILA, University of Colorado, Boulder (CO), USA
October 2009 - September 2011:	Research Associate
<i>Institution:</i>	University of Maryland, College Park (MD), USA joint with NASA Goddard Space Flight Center, USA
November 2006 - September 2009:	PostDoc
<i>Institution:</i>	Max Planck Institute for Gravitational Physics (Albert Einstein Institute), Potsdam, Germany

## Education

2002 - 2006:	Ph.D. training at SISSA (International School for Advanced Studies), Trieste, Italy.
<i>Degree:</i>	PhD in Astrophysics.
<i>Date:</i>	October 26 <sup>th</sup> , 2006.
<i>Supervisor:</i>	Prof. Luciano Rezzolla.
<i>Thesis:</i>	General Relativistic Magnetohydrodynamics: fundamental aspects and applications
1996 - 2002:	Undergraduate studies in Physics at the University of Parma, Parma, Italy.
<i>Degree:</i>	M.Sc. in Physics (Laurea 110/110).
<i>Date:</i>	July 17 <sup>th</sup> , 2002.
<i>Advisor:</i>	Prof. Enrico Onofri.
<i>Thesis:</i>	Development of algorithms to study matter at gravitational collapse

**Grants (80000 USD, 313000 EUR, and 71 M cpu hours as PI)**

- PI,  $\sim 0.1$  million core hours CINECA computer time grant IscrC\_NSBH, 2022
- collaborator (PI Manuela Campanelli), NASA Grant No. 17-TCAN17-0018 (3 years,  $\sim$  **\$1,600,000**, 2018-2021)
- PI,  $\sim 0.4$  million core hours CINECA computer time grant IscrC\_SMBHB, 2019-2020
- PI, 3 million core hours CINECA computer time grant IscrB\_HM-BNS, 2017-2018
- PI, 33.4 million core hours PRACE computer time grant 2016153613 “Magneto - Effect of Magnetar Level Fields in Binary Neutron Star Mergers”, 2017-2018
- collaborator (PI Davide Lazzati), NASA Grant No. 16-ATP16-0033 (3 years, **\$440000**, 2017-2020)
- collaborator (PI Rosalba Perna), NSF Grant No. AST-1616157 (3 years, **\$405000**, 2016-2019)
- co-I (PI Troja), ATCA (Australia Telescope Compact Array) observational grant no. C3059, 2015-2016
- PI, 0.2 million core hours CINECA computer time grant IsC34\_HMBNS, 2015-2016
- PI,  $\sim 16$  million core hours PRACE computer time grant “GRSimStar - General Relativistic Simulations of binary neutron Star mergers”, 2015-2016
- PI, 1 million core hours CINECA computer time grant IsC24\_GRMHDNS, 2014-2015
- co-PI (PI Zachariah Etienne), 1 million core hours NSF XSEDE computer time grant TG-AST140068, 2014-2015
- PI, MIUR FIR Grant No. RBFR13QJYF (3 years, **EUR 313000**, 2014-2017)
- collaborator (PI John Baker), NASA Grant No. 13-ATP13-0077 (3 years, **\$440000**, 2014-2017)
- PI, 4 million core hours NSF XSEDE computer time grant TG-PHY110027, 2013-2014
- PI, NASA Grant No. NNX12AO67G (1 year, **\$80000**, 2012-2013)
- PI, 8 million core hours NSF XSEDE computer time grant TG-PHY110027, 2012-2013
- PI, 6.4 million core hours NSF Teragrid computer time grant TG-PHY110027, 2011-2012
- co-I (PI Sean McWilliams), 1.5 million core hours NSF Teragrid computer time grant TG-AST100027, 2010-2011
- co-PI (PI Erik Schnetter), 21.2 million core hours NSF Teragrid computer time grant TG-MCA02N014, 2010

## Teaching Experience

- University of Milano-Bicocca (2019 - Present)
  - 2022 - Present: “Numerical Relativity” (42 hour course for M.Sc. students)
  - 2019 - Present: “Elementi di Astrofisica” (48 hour course for Bachelor students on “Introduction to Astrophysics”)
  - 2022 - 2023: “Introduction to Python” (10 hour course for Bachelor students)
  - 2020 - 2021: “Astrofisica Applicata” (42 hour course for M.Sc. students on “Applied Astrophysics”)
  - 2021: “Computational Physics with Applications to Astrophysics” (10 hour course for PhD students)
  - 2019: “Laboratorio di Astrofisica” (30 hour course for M.Sc. students on “Laboratory for Astrophysics”)
- University of Trento (2013 - 2019)
  - 2016 - 2019: “Fisica Generale III (Physics III)” (84 hour course for Bachelor students)
  - 2014 - 2019: “High Energy Astrophysics” (48 hour course for M.Sc. students)
  - 2013 - 2014: “Computational Physics (Advanced)” (12 hour course for M.Sc. students)
- International Schools
  - September 4 - 9 2022: 4 lectures on “Binary Neutron Star Mergers and Nuclear Physics” at the 40th edition of the École Joliot-Curie, Saint-Pierre d’Oléron, France
  - August 29 - September 2 2022: lecture on GRMHD and tutorial on GRHydro at the European Einstein Toolkit Meeting 2022, Dublin, Ireland
  - July 27 2021: 45 minutes tutorial on “Using LORENE Binary Neutron Star Initial Data” at the North American Einstein Toolkit School 2021 (online)
  - September 2 - 6 2019: 2 hour lecture on “Introduction to numerical methods for general relativistic magnetohydrodynamics” at the European Einstein Toolkit Workshop 2019, London, UK
  - December 5 2018: 3 hour lecture and tutorial on the Einstein Toolkit at the PRACE school on “HPC methods for Computational Fluid Dynamics and Astrophysics”, Rome, Italy
  - September 10 - 13 2018: 2 hour lecture on “Introduction to numerical methods for general relativistic magnetohydrodynamics” at the European Einstein Toolkit Workshop 2018, Lisbon, Portugal
  - November 15 2017: 1 hour lecture on “Einstein Toolkit” at the PRACE school “HPC Methods for CFD and Astrophysics”, CINECA, Bologna, Italy
  - July 4 - 8 2016: 10 hour lectures on “Neutron Star Mergers and Gravitational Waves” given at the 2016 ECT\* Doctoral Training Programme
  - May 6 2008: 2 hour lecture on “Gravitational Collapse” given at the 3<sup>rd</sup> VESF School on Gravitational Waves, Cascina (Pisa), Italy
  - March 18 2008: 45 minute lecture on “Numerical Relativity at AEI: Simulating Single and Binary Neutron Stars” given at the *Ferienkurs in Gravitationsphysik 2008* (Semester break courses on Gravitational Physics) at AEI, Potsdam, Germany

## **Students and Postdocs Mentored (49 Bachelor and 14 Master students, 2 PhD, 3 postdocs, all as official supervisor)**

- University of Milano-Bicocca (2019-Present)
  - master students: Lorenzo Sala, Federico Cattorini, Giulia Crotti, Edoardo Giangrandi, Beatrice Giudici, Lorenzo Ennoggi, Riccardo Brivio, Sofia Maggioni, Alberto Ghedin, Alice Gambaro, Vittorio Bomba
  - bachelor students: Luca Ambrosini, Manuel Piarulli, Alice Gambaro, Margherita Carola De Angelis, Matteo Colombo, Giulia Fumagalli, Nicola Cavalleri, Pietro Barbesta, Marta Bucca, Matteo Boschini, Fabio Cozzi, Davide Cremonesi, Serena Valtolina, Alessandro Santini, Christian Pagliari, Matteo Mangiatordi, Alessandro Ciurlino, Samuel Mucedola, Lorenzo Bertassi, Stefano Dell’Era, Fabrizio Davide Brown, Alice Perego, Giovanni Giarda, Andrea Rusconi
- University of Trento (2013-2019)
  - Postdocs: Riccardo Ciolfi, Wolfgang Kastaun, Federico Cipolletta
  - PhD students: Takumu Kawamura, Andrea Endrizzi
  - master students: Andrea Endrizzi, Francesco Maria Fabbri, Daniele Scappini (in collaboration with Röchling Automotive)
  - bachelor students: Elisa Ritondale, Francesco Gramendola, Luigi Bassini, Lumen Boco, Lorenzo Zandonella Dall’Aquila, Giulio Isacchini, Riccardo La Placa, Federico Zangrandi, Simone Veronese, Uisem El Haddadi, Christian Dioguardi, Luca Silvio Perli, Filippo Santoliquido, Giacomo Ricigliano, Alberto Chimenti, Riccardo Cominotti, Daniele Franch, Lorenzo Speri, Eva Casotti, Leonardo Chiesa, Nicola Pedron, Dennis Verra, Chiara Avigo, Silvia Ferro, Luca Zuanazzi
- JILA, University of Colorado (2011-2013)
  - undergraduate students: John Mark Demopoulos
- University of Maryland and NASA GSFC (2009-2011):
  - PhD students: John Capone (2010 summer internship at NASA Goddard Space Flight Center)
  - undergraduate students: Philip Cowperthwaite (2011 summer internship at NASA Goddard Space Flight Center)
- Albert Einstein Institute (2006-2009):
  - PhD students: Kyriaki Dionysopoulou (advisor L. Rezzolla), Filippo Galeazzi (advisor L. Rezzolla), Aaryn Tonita (advisor L. Rezzolla), Thorsten Kellermann (advisor L. Rezzolla)
  - undergraduate students: David Link (advisor L. Rezzolla), Filippo Galeazzi (advisor L. Rezzolla)

## Awards and Leadership Roles

June 2022 - Present:	leader of the Einstein Telescope Research Unit of Milano-Bicocca
September 20 2022:	2022 <b>Aspen Institute Italia Award</b> for the collaboration and scientific research between Italy and the USA
January 2021 - Present:	National Coordinator of the INFN TEONGRAV research collaboration (largest Italian network involving theory groups active in the fields of gravitational waves, general relativity, and multimessenger astrophysics)
January 2020 - Present:	Local Coordinator of the Virgo group at Milano-Bicocca
May 10 2019:	Awarded the Italian National Scientific Qualification (Abilitazione Scientifica Nazionale) to become a full professor in theoretical physics (02/A2)
March 28 2017:	Awarded the Italian National Scientific Qualification (Abilitazione Scientifica Nazionale) to become a full professor in astronomy and astrophysics (02/C1)

## International Collaborations and Scientific Societies

June 2022 - Present	Member of the Einstein Telescope Collaboration
July 2018 - Present	Member of the LISA Consortium
April 2017 - Present	Member of the LIGO-Virgo-KAGRA Collaboration
September 1 2015 - Present:	Member of the Italian Physical Society
October 1 2009 - Present:	Member of the American Physical Society

## Refereeing Activities

I served on review panels for the following agencies: **DFG (2020)**, **NASA (2017)**, **NSF (2020)**.

Proposal Reviewer for: Alexander von Humboldt Foundation (2021), CINECA (2018, 2019), DFG (2021, 2022), FNRS (2020), ISF (2016), NASA (2013, 2017), NSERC (2014), NSF (2013, 2015, 2017, 2018, 2022), PRACE (2018), LinkSCEEM/Cy-Tera (2014)

Referee for: *Astrophysical Journal*, *Astrophysical Journal Letters*, *Astrophysics and Space Science*, *Classical and Quantum Gravity*, *Computational Astrophysics and Cosmology*, *International Journal of Modern Physics D*, *Journal of Fluid Mechanics*, *Journal of Physics G: Nuclear and Particle Physics*, *Living Reviews in Relativity*, *Mathematical Reviews*, *Monthly Notices of the Royal Astronomical Society*, *Physical Review D*, *Physical Review Letters*, *SIAM Journal on Scientific Computing*, *SIGMA: Symmetry, Integrability and Geometry: Methods and Applications*

Editorial Boards: Review Editor in Cosmology, part of the journals *Frontiers in Physics* and *Astronomy and Space Sciences*; Topic Editor of the 2021 special issue “Gravitational Waves: A New Window to the Universe” (*Frontiers*)

## Conference Organization

August 29 -September 2 2022:	Organizer of the “European Einstein Toolkit Meeting 2022” (Dublin, Ireland)
June 20 - 24 2022:	Organizer of the ECT* workshop “Neutron Stars as Multi-Messenger Laboratories for Dense Matter” (Trento, Italy)
June 14 - 17 2021:	Organizer of the ECT* online workshop “Neutron Stars as Multi-Messenger Laboratories for Dense Matter”
September 2 - 6 2019:	Organizer of the “European Einstein Toolkit Workshop 2019” (London, UK)
September 10 - 13 2018:	Organizer of the “European Einstein Toolkit Workshop 2018” (Lisbon, Portugal)
October 11 - 14 2017:	Organizer of the “EU Einstein Toolkit Workshop 2017 & EdFest” (Palma de Mallorca, Spain)
September 11 - 15 2017:	Member of the Local Organizing Committee of the National Congress of the Italian Physical Society (Trento, Italy)
June 12 - 16 2017:	Co-Chair of the ECT* Workshop “Nuclear Astrophysics in the Gravitational Wave Astronomy Era” (Trento, Italy)
June 13 - 17 2016:	Chair of the “Einstein Toolkit EU School and Workshop 2016” (Trento, Italy)
August 11 - 14 2015:	Organizer of the “Einstein Toolkit Workshop 2015” (Stockholm, Sweden)
May 2014 - November 2017:	Topic Leader for the topic on “Numerical modelling in binary inspirals” in the EU COST Action <i>NewCompStar</i>
April 7 - 8 2008:	Organizer of the “Whisky” Retreat 2008, Parma, Italy

## Main Administrative Duties

November 2022 - Present:	Member of the Faculty committee of the PhD School in Physics and Astrophysics at the University of Milano-Bicocca
July 2021 - Present:	Member of the University of Milano-Bicocca Working Group on International Ranking
January 2021 - Present:	Member of the committee on gender issues of the Physics Department of the University of Milano-Bicocca
October 2016 - June 2019:	Coordinator of International Agreements for the Physics Department of the University of Trento
July 2014 - June 2019:	Colloquium organizer for the Department of Physics of the University of Trento (Italy)
June 2014 - June 2019:	Member of the Faculty committee of the PhD School in Physics at the University of Trento
October 2017 - March 2019:	Member of the selection committee for postdoctoral fellowships at TIFPA-INFN (Trento, Italy)
October 2014 - October 2018:	Member of the committee of the SISSA-Trento Joint Master Degree
October 2014 - October 2018:	Member of the committee of the Tuebingen-Trento Joint Master Degree
October 2010 - September 2011:	Organizer of Seminars on Computational Astrophysics at NASA Goddard Space Flight Center, Greenbelt, MD, USA
January 2007 - July 2009:	Organizer of Seminars and Journal Clubs for the Numerical Relativity group at AEI, Potsdam, Germany
November 2004 - October 2006:	PhD Students' Representative for the Astrophysics Sector at SISSA, Trieste, Italy

## Invited Seminars and Talks (46 in total, only most recent ones listed)

- September 7-9 2021: XXIV SIGRAV Conference on General Relativity and Gravitation (Urbino University, Italy)  
- **invited plenary talk** on “GRMHD Simulations of Compact Object Binaries”
- July 5-10 2021: Sixteenth Marcel Grossmann Meeting (online)  
- **invited talk** on “From Whisky to Spritz: Simulating Magnetized Binary Neutron Star Mergers”
- April 22 2021: **invited online seminar** at the School of Mathematical Sciences of the University of Southampton (Southampton, UK) on “General Relativistic MagnetoHydroDynamic Simulations of Neutron Star Binaries”
- August 3-7 2020: Workshop “(VIRTUAL) North American Einstein Toolkit Workshop 2020” (CCT, LSU, USA)  
- **invited talk** on “The Spritz Code”
- June 17-19 2019: Workshop “North American Einstein Toolkit workshop 2019” (RIT, Rochester, NY, USA)  
- **invited talk** on “Binary Neutron Star Mergers with WhiskyMHD”
- June 14 2019: Workshop “3<sup>rd</sup> FLAG Meeting: the Quantum and Gravity” (Catania, Italy)  
- **invited review talk** on “Binary Neutron Star Mergers: Numerical Simulations and Observations”
- February 25-26 2019: Workshop “GWEOS-2019” (Pisa, Italy)  
- **invited talk** on “BNS mergers with modern microscopic nuclear EOS”
- July 19 2018: Workshop on “GR effects in cosmological large-scale structure” (Sexten, Italy)  
- **invited review talk** on “Numerical Relativity Simulations of Gravitational-Wave Sources”
- June 25 2018:  $\Psi$ 2 Workshop on “GAMMA-RAY BURSTS AND SUPERNOVAE: FROM THE CENTRAL ENGINES TO THE OBSERVER” (Orsay, France)  
- **invited review talk** on “Review on Numerical Simulations of Binary Neutron Star Mergers”
- June 11 - 13 2018: MODE Workshop on “Neutron stars and their environments” (Montpellier, France)  
- **invited talk** on “Numerical Simulations of Binary Neutron Star Mergers: Gravitational Waves and Short Gamma-Ray Bursts”
- December 5 2017: **invited seminar** at the Theoretisch Physikalisches Institut of the Friedrich Schiller Universitat (Jena, Germany) on “Simulating Binary Neutron Star Mergers in the Multi-Messenger Era”
- November 30 2017: **invited seminar** at the Physics Department of the University of Pisa (Italy) on “Simulating Binary Neutron Star Mergers in the Multi-Messenger Era”



- November 20 - 22 2017: “The Astrophysics of NS Mergers” (Center for Computational Astrophysics, Flatiron Institute, New York, NY, USA)  
- **invited talk** on “GRMHD simulations of binary NS mergers and possible future directions”
- June 30 2017: “European Physical Society 44TH CONFERENCE ON PLASMA PHYSICS” (Belfast, Northern Ireland)  
- **invited plenary talk** on “General Relativistic Magneto-HydroDynamic Simulations: a Review and Status Report”
- June 26 2017: “European Week of Astronomy and Space Science” (Prague, Czech Republic)  
- **invited review talk** on “Merging Neutron Stars as Tools for Fundamental Physics”
- January 25 2017: **invited seminar** at Stony Brook University (Stony Brook, NY, USA) on “Magnetic Field Effects in Merging Binary Neutron Stars”
- November 8 - 11 2016: “IV National Congress on GRBs” (Bergamo, Italy)  
- **invited review talk** on “General Relativistic Simulations of Gamma-Ray Burst Engines”
- September 9 2016: international workshop “SHORT GAMMA-RAY BURSTS: From observation to numerical simulations” (Trento, Italy)  
- **invited review talk** on “General Relativistic Simulations of Neutron Star Binaries and Short Gamma-Ray Bursts”
- June 4 2015: **invited seminar** at CENTRA (Instituto Superior Tecnico, Lisbon, Portugal) on “General Relativistic Simulations of Binary Neutron Star Mergers”
- November 25 2014: **invited seminar** at University of Parma (Parma, Italy) on “General Relativistic Simulations of Binary Neutron Star Mergers: Gravitational Waves and Short Gamma-Ray Bursts”
- November 14 2014: **invited seminar** at Institut für Theoretische Physik, Johann Wolfgang Goethe-Universitaet (Frankfurt, Germany) on “Investigating the Progenitors of Short Gamma-Ray Bursts via General Relativistic Simulations of Neutron Star Mergers”
- November 11 2014: **invited seminar** at Technische Universitaet Darmstadt (Darmstadt, Germany) on “General Relativistic Simulations of Binary Neutron Star Mergers: Gravitational Waves and Short Gamma-Ray Bursts”
- September 15 - 19 2014: Conference “XXI SIGRAV Conference on General Relativity and Gravitational Physics” (Alessandria, Italy)  
- **invited talk** on “General Relativistic Simulations of Binary Neutron Stars: Gravitational Waves and Gamma-Ray Bursts”
- August 27 2014: **invited seminar** at Stony Brook University (Stony Brook, NY, USA) on “General Relativistic Simulations of Binary Neutron Star Mergers: Gravitational Waves and Short Gamma-Ray Bursts”

- July 14 - 18 2014: International Workshop “Astro-GR/VESF-School” (Rome, Italy)  
- **invited review talk** on “General Relativistic Simulations of Neutron Star Binaries”
- June 23 2014: **invited seminar** at the Institute of Astrophysics (Paris, France) on “General Relativistic Magnetohydrodynamic Simulations of Binary Neutron Star Mergers”
- April 22 - 25 2014: International Conference “Sant Cugat Forum on Astrophysics: Gravitational Waves Astrophysics” (Sant Cugat, Spain)  
- **invited review talk** on “Simulations of NS-NS mergers: gravitational waves and electromagnetic signals”
- September 23 - 27 2013: International Conference “MICRA 2013” (ECT\*, Trento, Italy)  
- **invited review talk** on “General Relativistic Simulations of NS-NS and NS-BH mergers”
- May 13 - 17 2013: International Conference “FOE Fifty-One Erg” (NCSU, Raleigh, NC, USA)  
- **invited talk** on “General Relativistic Simulations of Compact Binary Mergers”
- April 13 - 16 2013: April Meeting of the American Physical Society (Denver, CO, USA)  
- **invited talk** on “General Relativistic Magnetohydrodynamic Simulations of Compact Binary Mergers”
- June 4 - 8 2012: International Conference “CompStar: the physics and astrophysics of compact stars” (Tahiti, French Polynesia)  
- **invited talk** on “Magnetized binary neutron star mergers”
- May 11 2012: JSI Mini-Symposium on “Electromagnetic Counterparts to Gravitational Wave Sources”, NASA Goddard Space Flight Center (Greenbelt, MD, USA)  
- **invited talk** on “GRMHD Simulations Of Binary Neutron Stars and Binary Black Holes”
- March 12 2012: **invited seminar** at CITA (Toronto, Canada) on “General Relativistic Magnetohydrodynamic Simulations of Neutron Stars and Black Holes”
- September 7 - 9 2011: “Parma Workshop on Numerical Relativity and Gravitational Waves 2011”, University of Parma, Italy  
- **invited talk** on “Magnetized Binary Neutron Star Mergers”
- June 13 - 17 2011: International Conference “Astronum 2011”, Valencia, Spain  
- **invited talk** on “Magnetized Binary Neutron Star Mergers”

## Contributed Seminars and Talks (53 in total, only most recent ones listed)

- January 16 - 20 2023: “Timescales in Astrophysics Conference” (NYU, Abu Dhabi, UAE), talk on “General Relativistic Simulations of Accretion Flows onto Merging Supermassive Black Holes”
- May 16 - 19 2022: “PHAROS Conference 2022” (Rome, Italy), talk on “Spritz - a publicly available GRMHD code”
- December 11 - 13 2019: SM & FT 2019 (Bari, Italy), talk on “TEONGRAV: HPC Simulations of Gravitational Wave Sources”
- April 22 - 26 2019: PHAROS Conference 2019 (Platja D’Aro - Girona, Spain), talk on “Effects of Chiral Effective Field Theory Equation of State on Binary Neutron Star Mergers”
- July 31 - August 4 2017: INT Workshop “Observational Signatures of r-process Nucleosynthesis in Neutron Star Mergers” (Seattle, WA, USA), talk on “Magnetic Field Effects in the Post-Merger Phase of Binary Neutron Stars”
- January 28 - 31 2017: “April Meeting” of the American Physical Society (Washington DC, USA), talk on “General Relativistic Simulations of Low-Mass Magnetized Binary Neutron Star Mergers”

## Outreach Activities

- June 22 2022: I coordinated the activities of the Astrophysics group for the 2022 summer camp in STEM fields organized by the University of Milano-Bicocca and open to high-school students.
- April 18 2019: public seminar in Italian on “La prima immagine di un buco nero: storia della foto del secolo” (The first image of a black hole: story of the picture of the century), more than 300 people attended and the seminar was also streamed live via Facebook
- February 21 2019: seminar in Italian on “Introduction to Astrophysics” at the high school “Galilei” in Trento
- September 29 2017: European Researchers’ Night at museum “MUSE” in Trento
- September 13 2017: seminar on gravitational waves at the high school “Prati” in Trento
- September 11 - 15 2017: member of the organizing committee of “Fisicittà” (<http://events.unitn.it/sif2017/fisicitta-programma-collaterale>), one week of events on Physics for the general public
- September 16 2006: “The Bizarre Universe: Black Holes, Quasar, Gamma-Ray Bursts”, SISSA OpenDay, Trieste, Italy
- October 25 2005: “The Bizarre Universe: Black Holes, Quasar, Gamma-Ray Bursts”, seminar given to high-school students of UWCAd (United World College of the Adriatic) visiting SISSA, Trieste, Italy
- September 18 2004: “The Bizarre Universe: Black Holes, Quasar, Gamma-Ray Bursts”, SISSA OpenDay, Trieste, Italy

## Press Releases

- September 21 2022: Bicocca press release on the 2022 Aspen Institute Italia Prize
- October 16 2017: organizer of the press conference at University of Trento for GW170817, UniTN web link and TIFPA web link (both in Italian)
- October 10 2012: JILA research highlight, “Messages from the Abyss”, <https://jila.colorado.edu/news-highlights/messages-abyss>
- September 27 2012: NASA Goddard press release, “Simulations Uncover ‘Flashy’ Secrets of Merging Black Holes”, <http://www.nasa.gov/topics/universe/features/black-hole-secrets.html>
- April 7 2011: NASA press release No. 11-103, “Breakthrough Study Confirms Cause Of Short Gamma-Ray Bursts”, [http://www.nasa.gov/home/hqnews/2011/apr/HQ\\_11-103\\_Gamma\\_Rays.html](http://www.nasa.gov/home/hqnews/2011/apr/HQ_11-103_Gamma_Rays.html)

## Numerical Codes

- developer of the general relativistic magnetohydrodynamic codes **Spritz** and **WhiskyMHD**
- developer of the first complete exact Riemann solver for relativistic MHD

## Computational Skills

Operating Systems:	DOS, Linux, Mac OS X, Windows
Programming Languages:	C, C++, Fortran 77, Fortran 90, Python
Software:	Amira, Mathematica, Matlab, OpenDX, VisIt
Working experience:	Computer Management Assistant of the Astrophysics sector at SISSA (Nov 2004 - Oct 2006)
Scientific Visualization:	excellent experience in visualizing results from numerical simulations through the use of programs such as VisIt, Matlab, and OpenDX
High-performance computing:	excellent experience in using several HPC resources

## Personal

- *Citizenship*: Italian citizen
- *Spoken Languages*: Italian (native), English (fluent)

## Refereed Publications

(132 publications, h-index=60, ~20000 citations in NASA ADS)  
(LIGO-Virgo-KAGRA Collaboration publications are not included in the following list)

1. Lopez Armengol F. G. et al 2022, *Handing off the outcome of binary neutron star mergers for accurate and long-term postmerger simulations*, Phys. Rev. D, **106**, 083015
2. Colombo A., Salafia O. S., Gabrielli F., Ghirlanda G., **Giacomazzo B.**, Perego A., Colpi M. 2022, *Multi-messenger Observations of Binary Neutron Star Mergers in the O4 Run*, ApJ, **937**, 79
3. Kalinani J. V., Ciolfi R., Kastaun W., **Giacomazzo B.**, Cipolletta F., Ennoggi L. 2022, *Implementing a new recovery scheme for primitive variables in the general relativistic magnetohydrodynamic code Spritz*, Phys. Rev. D, **105**, 103031
4. Cattorini F., Maggioni S., **Giacomazzo B.**, Haardt F., Colpi M., Covino S. 2022, *Misaligned Spinning Binary Black Hole Mergers in Hot Magnetized Plasma*, ApJ Letters, **930**, L1
5. Murguia-Berthier A. et al. 2021, *HARM3D+NUC: A New Method for Simulating the Post-merger Phase of Binary Neutron Star Mergers with GRMHD, Tabulated EOS, and Neutrino Leakage*, ApJ, **919**, 95
6. Lazzati D., Perna R., Ciolfi R., **Giacomazzo B.**, López-Cámara D., Morsony B. 2021, *Two Steps Forward and One Step Sideways: The Propagation of Relativistic Jets in Realistic Binary Neutron Star Merger Ejecta*, ApJ Letters, **918**, L6
7. Cattorini F., **Giacomazzo B.**, Haardt F., Colpi M. 2021, *Fully general relativistic magnetohydrodynamic simulations of accretion flows onto spinning massive black hole binary merger*, Phys. Rev. D, **103**, 103022
8. Cipolletta F., Kalinani J. V., Giangrandi E., **Giacomazzo B.**<sup>1</sup>, Ciolfi R., Sala L., Giudici B. 2021, *Spritz: General Relativistic Magnetohydrodynamics with Neutrinos*, Class. Quantum Grav., **38**, 085021
9. Salafia O. S., **Giacomazzo B.** 2021, *Accretion-to-jet energy conversion efficiency in GW170817*, A&A, **645**, A93
10. Ricci R., Troja E., Bruni G., Matsumoto T., Piro L., O'Connor B., Piran T., Navaieelavasani N., Corsi A., **Giacomazzo B.**, Wieringa M. H. 2020, *Searching for the radio remnants of short duration gamma-ray bursts*, MNRAS, **500**, 1708
11. Cipolletta F., Kalinani J. V., **Giacomazzo B.**<sup>2</sup>, Ciolfi R. 2020, *Spritz: a new fully general-relativistic magnetohydrodynamic code*, Classical and Quantum Gravity, **37**, 135010
12. Endrizzi A., Perego A., Fabbri F. M., Branca L., Radice D., Bernuzzi S., **Giacomazzo B.**, Pederiva F., Lovato A. 2020, *Thermodynamics conditions of matter in the neutrino decoupling region during neutron star mergers*, The European Physical Journal A, **56**, 15
13. Ciolfi R., Kastaun W., Kalinani J. V., **Giacomazzo B.** 2019, *First 100 ms of a long-lived magnetized neutron star formed in a binary neutron star merger*, Phys. Rev. D, **100**, 023005

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