EMANUELE BERTI - CURRICULUM VITAE - JUNE 19, 2024

PERSONAL DATA

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Languages:	Italian (native), English (fluent), Greek, French

CURRENT POSITIONS

7/1/2018–present	**Professor** Johns Hopkins University, Baltimore, MD
7/1/2018–present	**Adjunct Professor** University of Mississippi, Oxford, MS

PREVIOUS POSITIONS

7/1/2014–6/30/2018	**Associate Professor (with Tenure)** University of Mississippi, Oxford, MS
1/1/2018–6/30/2018	**Research Professor** Johns Hopkins University, Baltimore, MD
6/1/2015–8/31/2017	**FCT Consolidator Award (Full Research Professorship)** Instituto Superior Técnico, Lisbon, Portugal
5/15/2010–5/14/2016	**Visiting Associate Professor** California Institute of Technology, Pasadena, CA
1/21/2009–6/30/2014	**Assistant Professor** University of Mississippi, Oxford, MS
8/27/2007–1/20/2009	**NASA ORAU Senior Post-doctoral Fellow**, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA (USA).
9/1/2006–8/31/2007	**Research Scientist**, McDonnell Center for the Space Sciences, Department of Physics, Washington University, Saint Louis, MO (USA). Position supported by NASA Grant NNG06GI60 (*General Relativity, Inspiralling Compact Binaries and LISA*).
10/1/2003–8/31/2006	**Post-doctoral position** with Prof. Clifford M. Will. In 2003-2004 I worked in the Groupe de Cosmologie et Gravitation (GRϵCO), Institut d'Astrophysique de Paris. On 9/1/2004 I moved to Saint Louis.
11/11/2001–9/30/2003	**Post-doctoral position** at the Aristotle University of Thessaloniki (local coordinator: Prof. Kostas D. Kokkotas) within the European Network on *Gravitational Wave Astronomy*.

EDUCATION

1/28/2002	**PhD in Physics**, University of Rome *La Sapienza*. Supervisor: Prof. Valeria Ferrari. My PhD thesis is online at `https://pages.jh.edu/~eberti2/research/phd.pdf`
10/30/1998	**Laurea degree in Theoretical Physics** (Laurea in Fisica), University of Rome *La Sapienza*, Full marks *cum laude* (110/110 e lode). Supervisors: Prof. Valeria Ferrari, Dr. Omar Benhar. My Laurea thesis (in Italian) is online at `https://pages.jh.edu/~eberti2/research/laurea.pdf`
1993	**High school diploma** (maturità classica), Liceo Classico M. Buratti (Viterbo), Full marks (60/60).

Awards/Professional Recognition

• **Simons Investigator** (2024-2028).

• **American Physical Society's Richard A. Isaacson Award in Gravitational-Wave Science** (2023), *"For contributions to gravitational-wave science through groundbreaking studies of black hole quasinormal modes, higher multipole radiation, astrophysical detection rates, spin evolution, and tests of general relativity, and for leadership in preparing impactful white papers and review articles."*

• **President Line of the International Society on General Relativity and Gravitation** (2019-2028), elected on 7/12/2019 at the GR22/Amaldi13 Meeting in Valencia. Now serving as President (2022-2025).

• **Clarivate Highly Cited Researcher List (2023).**

• **Fellow of the International Society on General Relativity and Gravitation** (elected 2019) *"for important contributions to the theory of perturbations of black holes, to the interface between post-Newtonian theory and numerical relativity, and to the use of gravitational-wave observations to test theories of gravity and yield astrophysical information."*

• **Fellow of the American Physical Society** (elected 2015) *"for important contributions to theoretical gravitational-wave physics, including quasi-normal modes of black holes, tests of alternative theories, the links between analytic and numerical relativity, and the astrophysics of merging black holes."*

• **Chair Line of the American Physical Society's Division of Gravitational Physics** (2016-2019).

• **Member of the Editorial Board of *Physical Review Letters*** as Divisional Associate Editor in Gravitational Physics (2/1/2017-3/31/2023).

• **University of Mississippi College of Liberal Arts Inaugural Research, Scholarship, and Creative Achievement Award** (2017). See the article on the University's news website.

• Italian Habilitation (Abilitazione Scientifica Nazionale) for a Full Professorship in Theoretical Physics and Astrophysics (3/28/2017–present).

• IOP Outstanding Reviewer Award "for the high quality and timeliness of your reviews for Classical and Quantum Gravity" (2016).

• American Physical Society Outstanding Referee Award (2011).

• Elected Member of the Nominating Committee of the International Society on General Relativity and Gravitation (the election took place at the GR20 Conference in Warsaw, July 2013).

• Finalist of the 2013 ISSNAF Award for Young Investigators (an award for Italian scientists under the age of 40 working in North America). I was one of 7 finalists in the combined fields of Astrophysics, Physics, Chemistry and Mathematics (and one of 29 finalists in total, for a single award that encompassed also Environmental Sciences, Cognitive and Behavioral Neuroscience, and Biomedicine).

• NASA ORAU Senior Post-doctoral Fellowship, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California (8/27/2007–1/20/2009).

• Ranked first nationwide in Theoretical Physics in a competition for post-graduate grant awards from the Italian National Institute for Nuclear Physics (INFN) in 1999.

• Scientific reviewer for a monograph on Biology (*Frontiere della Vita*) for the Italian Encyclopedia *Treccani*. The Advisory Board included Nobel prize laureates Rita Levi Montalcini, David Baltimore, Renato Dulbecco and Francois Jacob. I reviewed papers on neural networks for a volume coordinated by Giorgio Parisi and Daniel Amit (December 1998–June 1999).

• Tuition waiver for high GPA (awarded every year as an undergraduate in Rome).

• Best high-school student award (*Premio Rotary Viterbo Scuola*) (1993).

Membership and leadership roles in professional societies

• Member of the Advisory Board of the Kavli Institute of Theoretical Physics (UC Santa Barbara): see https://www.kitp.ucsb.edu/advisory-board/directory (starting 2025).

• President of the International Society on General Relativity and Gravitation (2022-2025). Elected in June 2019, served as President Elect in 2019-2022.

• Chair Line of the American Physical Society's Division of Gravitational Physics (2016-2019).

• Fellow and lifetime member of the International Society on General Relativity and Gravitation.

• Fellow of the American Physical Society and member of the Division of Gravitational Physics.

• Member of the Nominating Committee for the APS Topical Group in Gravitation (2011–2012): see http://www.aps.org/units/ggr/governance/committees/index.cfm

• Member of the Hellenic Society on Relativity, Gravitation and Cosmology.

• Member of the Sociedade Portuguesa de Relatividade e Gravitação.

• Member of the Physics & Engineering Advisory Council of the Mississippi Academy of Sciences.

Professional service for the gravitational wave community

• Member of the Cosmic Explorer Scientific Advisory Committee (2022-2024).

• Member of the first Gravitational Wave Open Science Center (GWOSC) Advisory Panel (2020).

• Member of the LISA Science Group (LSG). Co-chair (with Chiara Caprini, Vitor Cardoso and Alberto Sesana) of the "Interpretation/key science projects" work package group (September 2018-August 2022).

• Selected as a member of NASA's U.S. LISA Study Team (2017-2024).

• Selected as a member of NASA's eLISA L3 Study Team (2016-2017). The purpose of the L3 Study was to understand how NASA might participate in ESA's L3 gravitational wave mission, to inform NASA's engagement through the mission's earliest stages, and to prepare for the 2020 decadal survey.

• Member of the eLISA/NGO Science Performance Evaluation Taskforce, and previously of the taskforce on LISA Science Performance Evaluation (by Parameter Estimation).

• Member of the Science Taskforce for the NASA Physics of the Cosmos Gravitational-Wave Mission Concept Study Final Report: see http://pcos.gsfc.nasa.gov/

• Convener of the "Black holes" working group of the NASA Gravitational Wave Science Analysis Group (GWSAG).

• Contributor to the white paper *The gravitational universe*, submitted for the L2/L3 selection of the European Space Agency's Cosmic Vision program (2013) (see http://arxiv.org/abs/1305.5720).

Current, pending and past support

Current support as PI

• Simons Investigator (1/1/2024-12/31/2028). Total award amount: $960,000.

• PI of the NSF Grant PHY-2207502 *Physics and Astrophysics of Compact Binaries* (6/1/2022-5/31/2025). Total award amount: $432,276.

• PI of NSF Collaborative Proposal AST-2307146 *Understanding Compact Binary Formation With Gravitational Wave Observations* (9/1/2023-8/31/2026), Co-PI: Bangalore Sathyaprakash (Pennsylvania State University & Cardiff). Award amount (Johns Hopkins University): $413,757.

Current support as Co-PI or collaborator

• Co-PI of the John Templeton Foundation Grant 62840 *Gravitational waves for cosmology, gravity, and quantum mechanics* (9/1/2023-8/31/2026). PI: Marc Kamionkowski. Total award amount: $718,037.

• Co-PI of the NASA ATP Grant 21-ATP21-0010 *Overcoming Systematics in Gravitational Wave Tests of General Relativity with LISA* (5/1/2022-4/30/2025). PI: Nicolás Yunes. Total award amount: $981,986. (Johns Hopkins University: $474,977).

• Co-PI of the NASA LISA Preparatory Science Grant 20-LPS20-0011 *Preparing LISA for Intermediate-Mass Black Hole Science* (09/15/2021-9/14/2024). PI: Giacomo Fragione. Co-PIs: Emanuele Berti, Laura Blecha, Vicky Kalogera, Fred Rasio. Total award amount: $709,670. (Johns Hopkins University: $144,684).

• Co-PI at Johns Hopkins University of the project *Fundamental physics and astrophysics with next generation of gravitational wave detectors*. This is one of 18 Projects of Great Relevance (PGR) supported by the Italian MAECI (Ministero per gli Affari Esteri e della Cooperazione Internazionale) within the Italy-United States Bilateral Science-Technology Executive Protocols.
PI: Andrea Maselli (Gran Sasso Science Institute). Total award amount: € 153,000.

• *Gravitational Universe: Challenges and Opportunities* Marie Sklodowska-Curie Research and Innovation Staff Exchange (RISE) Action, funded by the EU Horizon 2020 program H2020-MSCA-RISE-2020. Coordinator: L. Gualtieri. PIs: E. Barausse, L. Bernard, E. Berti, V. Cardoso, T. Harada, L. Lehner, M. Vallisneri (2020-2025). € 280,600.

• Co-PI of the project *High energy grazing collisions of black holes* (PHY-090003) together with Ulrich Sperhake (PI), Vitor Cardoso and Frans Pretorius. The project was awarded a total of about 25 million CPU hours by the TeraGrid Resource Allocations Committee T-RAC (that was later renamed to XSEDE and ACCESS). It has been continuously renewed since Jan 1 2009, with the last renewal in March 2024.

• Co-I of NSF supercomputing Award PHY20043 *Shedding light on light dark matter candidates in strong gravity environments* (2021-present) with JHU postdoc Thomas Helfer (PI). The project was awarded a total of about $250,000$ Frontera Pathways Node Hours.

Visiting Appointments

Visiting Scholar at the Amaldi Research Center, University of Rome "Sapienza" (2019-present).

Past support as PI

• PI of NSF Collaborative Proposal AST-2006538 *Understanding Compact Binary Formation With The First Gravitational Wave Detections* (9/1/2020-8/31/2023), Co-PI: Bangalore Sathyaprakash (Pennsylvania State University & Cardiff). Award amount (Johns Hopkins University): $408,251.

• PI of the NASA ATP Grant 19-ATP19-0051 *Black hole binary astrophysics in the LISA era* (1/7/2020-1/6/2023). Total award amount: $600,000.

• PI of the NSF Grant PHY-1912550 *Physics and Astrophysics of Compact Binaries* (5/15/2019-4/30/2022). Total award amount: $360,000.

• PI of the NASA ATP Grant 17-ATP17-0225 *Exploring Extreme Gravity with LISA: Developing a Science Case for Tests of General Relativity* (10/1/2018-9/30/2021). Co-PI: Nicolás Yunes (Montana State University). Total award amount: $814,912.

• PI of the NSF Grant AST-1841358 *Understanding Compact Binary Formation With The First Gravitational Wave Detections* (7/1/2017-6/30/2020, formerly AST-1716715), Co-PI: Bangalore Sathyaprakash (Pennsylvania State University & Cardiff). Total award amount (Johns Hopkins University): $318,810.

• PI of the NSF Grant PHY-1841464 *Physics and Astrophysics of Compact Binaries* (9/1/2016-8/31/2019, formerly PHY-1607130). Total award amount: $315,000.

• Research funds for FCT Consolidator Award at the Instituto Superior Técnico, Lisbon, Portugal (6/1/2015–8/31/2017). Total award amount: € 50,000.

• PI of the NSF Faculty Early Career Development (CAREER) Grant PHY-1055103 *CAREER: Physics and Astrophysics of Compact Binaries* (9/1/2011-8/31/2016). Total award amount: $460,000.

• *Numerical Relativity and High Energy Physics*, International Research Staff Exchange Scheme (IRSES), awarded by the European Union under the FP7 programme. Coordinator: C. Herdeiro.
PIs: E. Berti, V. Cardoso, L. C. B. Crispino, L. Gualtieri, C. Herdeiro and U. Sperhake (2012-2015). € 318,000.

• PI of the NSF Grant PHY-0900735 *Gravitational waves from black hole binaries: modeling, astrophysics and strong-field tests* (9/1/2009-8/31/2012). Total award amount: $150,000.

• PI of the University of Mississippi Office of Research and Sponsored Programs Investment Grant *An International Graduate Program in Gravitational Physics*. Total award amount: $7,000.

• Oak Ridge Associated Universities (ORAU) Event Sponsorship Program Support for the Seventh Gulf Coast Gravity Meeting held at the University of Mississippi, Oxford (MS), April 19-20 2013. Total award amount: $2,000.

• College of Liberal Arts Summer Research Grant (Summer 2012). Total award amount: $7,500.

Past support as Co-PI or collaborator

• PI at Johns Hopkins of the Indo-U.S. Science and Technology Forum (IUSSTF) Virtual Networked *Indo-US Centre for the Exploration of Extreme Gravity*. Co-PIs of the Indo-US Centre for Gravitational-Physics and Astronomy are: Bangalore Sathyaprakash (US PI), Matias Zaldarriaga (Princeton) and Emanuele Berti (Johns Hopkins) in the US; KG Arun (Chennai Mathematical Institute, India PI), Parameswaran Ajith (International Centre for Theoretical Sciences, TIFR) and Anand S. Sengupta (Indian Institute of Technology, Gandhinagar).

• PI at Johns Hopkins University of the EU COST Action CA 16104 *Gravitational waves, black holes and fundamental physics* (GWverse): `http://www.cost.eu/COST_Actions/ca/CA16104?`

• *Strong Gravity and High Energy Physics* Marie Sklodowska-Curie Research and Innovation Staff Exchange (RISE) Action, funded by the EU Horizon 2020 program H2020-MSCA-RISE-2015. Coordinator: U. Sperhake. PIs: E. Barausse, E. Berti, V. Cardoso, L. Gualtieri, C. Herdeiro, A. Ishibashi, L. Lehner and U. Sperhake (2015-2020). € 288,000.

• Co-I of the project *Black hole dynamics in alternative theories of gravity*, 2011, Project AECT-2011-2-0015. Grant amount: 100k CPU hours on the Barcelona Supercomputing Center.

• Co-PI of the German SFB project *Improving Advanced LIGO/Virgo event rate estimates for compact binary mergers* (SFB PI: Luciano Rezzolla) together with Krzysztof Belczynski, Michal Dominik, Francesco Pannarale and Jocelyn Read. Grant amount: € 10,000.

• Member of the research team for the project *Strong curvature corrections to General Relativity: consequences for astro- and particle physics*, 2012/2013, CERN/FP/123593/2011. Grant amount: € 10,000.

• Member of the research team for the project *Astrophysics and fundamental physics with gravitational wave detectors*, 2009, Project FCT PTDC/FIS/098032/2008. Grant amount: € 95,000.

• Member of the research team for the project *Numerical Relativity and the AdS/CFT correspondence*, 2009, Project FCT PTDC/FIS/098025/2008. Grant amount: € 110,000.

• Member of the research team for the project *Instrumentação de segunda geração do Very Large Telescope Interferometer*, 2008, Project FCT PTDC/CTE-AST/098034/2008. Grant amount: € 196,560.

• Member of the research team for the project *Astrophysics and fundamental physics with gravitational wave detectors*, 2008, Project FCT PTDC/FIS/098032/2008. Grant amount: € 95,000.

• Member of the research team for the project *Phenomenology of gravitational events in LHC*, 2007, Project FCT POCI/FP/81915/2007. Grant amount: € 25,000.

• Member of the research team for the project *Gravitational waves: emission and detection*, 2007, Project FCT PTDC/FIS/64175/2006. Grant amount: € 100,380.

Sponsor of Visitor Grants/Travel Awards

• US sponsor for two American Physical Society International Travel Awards to visit Johns Hopkins University, awarded to Caio F. B. Macedo (Universidade Federal do Pará, Belém, Brazil). Total award amount: $2,000 (11/17/2016), $2,000 (11/14/2019).

• Sponsor for a Fulbright Fellowship to visit Johns Hopkins University, awarded to João Luís Rosa (Instituto Superior Técnico, Lisbon, Portugal).

• Sponsor for a Fulbright Fellowship to visit the University of Mississippi, awarded to Professor Mauricio Richartz (Federal University of ABC, São Paulo, Brazil).

Data/software sharing

• Made available numerical data and Mathematica notebooks to compute quasinormal mode frequencies, their angular mixing and their excitation coefficients:

`https://pages.jh.edu/~eberti2/ringdown/`

• Made available (i) Mathematica notebooks to compute the gravitational-wave amplitude of black hole-neutron star mergers (in collaboration with Pannarale, Kyutoku and Shibata), slowly rotating neutron star models in scalar-tensor theories (in collaboration with Pani), and (ii) numerical data on various topics (cumulative distribution functions for multiple gravitational-wave detector networks, hairy black hole solutions...): see

`https://pages.jh.edu/~eberti2/research/`

• Made available a Mathematica notebook to compute analytical approximations to the exterior metric of rapidly rotating neutron stars:

`http://www.astro.auth.gr/~niksterg/projects/BertiStergioulas/`

Conference organization

- *International Conference on General Relativity and Gravitation (GR24) and the Edoardo Amaldi Conference on Gravitational Waves* **(SOC member)**
  Glasgow (Scotland), July 14-18, 2025.
  https://iop.eventsair.com/gr24-amaldi16/
- *Kostas Fest* **(SOC member)**
  Symposium in honor of Kostas Kokkotas, Ermoupolis, Syros (Greece), September 1-3, 2024.
  https://sites.google.com/gssi.it/kdk65/
- *Ringdown Inside & Out* **(SOC member)**
  Niels Bohr Institute, Copenhagen (Denmark), August 26-30, 2024.
  https://strong-gr.com/ringdown-inside-and-out/
- *Physics and Astrophysics at the eXtreme (PAX) Meeting IX* **(SOC member)**
  King's College London, London (UK), July 23-25, 2024.
  https://indico.kcl.ac.uk/event/484/
- *Second Cosmic Explorer Symposium* **(SOC member)**
  online conference, April 23-25, 2024.
  https://indico.mit.edu/event/1010/
- *YITP long-term workshop: Gravity and Cosmology 2024* **(SOC member)**
  Yukawa Institute for Theoretical Physics, Kyoto University (Japan), January 29 - March 1, 2024.
  https://www2.yukawa.kyoto-u.ac.jp/~gc2024/index.php
- *10th International Conference on Gravitation and Cosmology (ICGC)* **(SOC member)**
  Indian Institute of Technology, Guwahati (India), December 6-9, 2023.
  https://indico.cern.ch/event/1268737/
- *"Gravitational-Wave POPulations: What's NeXt?" (POPX) Workshop*
  (co-organizer, with Davide Gerosa and Salvatore Vitale)
  University of Milano-Bicocca, July 10-14 2023.
  https://sites.google.com/unimib.it/gwpopnext
- *Physics and Astrophysics at the eXtreme (PAX) Meeting: PAX-2022*
  (co-organizer, with Salvatore Vitale and Bangalore Sathyaprakash)
  Massachusetts Institute of Technology, August 1-3 2022.
  https://indico.mit.edu/event/285/
- *23rd International Conference on General Relativity and Gravitation* **(SOC member)**
  Beijing (China), July 3-8, 2022.
  http://gr23beijing.com/
- *Intermediate Mass Black Holes: New Science From Stellar Evolution To Cosmology* **(SOC member)**
  San Juan, Puerto Rico, April 30-May 3 2022.
  https://sites.northwestern.edu/imbh/
- *1st "With a little help from my friends" Workshop*
  (co-organizer, with Bangalore Sathyaprakash and Davide Gerosa)
  Johns Hopkins University, April 13 2022.
  https://davidegerosa.com/with-a-little-help-from-my-friends-workshop/
- *YITP long-term workshop: Gravity and Cosmology 2022* **(SOC member)**
  Yukawa Institute for Theoretical Physics, Kyoto University (Japan), Jan 31-Mar 4 2022.
  https://www2.yukawa.kyoto-u.ac.jp/~gc2022/index.php
- *Physics and Astrophysics at the eXtreme (PAX) Meeting: PAX-2021* **(SOC Chair)**
  online conference, August 23-26, 2021.

https://sites.psu.edu/paxvii/

• *HopBham workshop* **(co-organizer, with Davide Gerosa)**
online workshop, January/February 2021.
https://www.davidegerosa.com/hopbham-workshop/

• *First Cosmic Explorer Meeting* **(SOC member)**
online conference, October 26-30, 2020.
https://sites.psu.edu/cosmicexplorermeeting/

• *Workshop on Parametrized Tests of General Relativity* **(principal organizer)**
Johns Hopkins University Homewood Campus, Bloomberg Center of Physics & Astronomy, Baltimore (MD), October 29-November 7, 2018. http://blackbird.pha.jhu.edu/waves/

• *First joint meeting of the NASA LISA Study Team (NLST) and the ESA Science Study Team (SST)*
(principal organizer, with Ann Hornschemeier)
Johns Hopkins University Homewood Campus, Bloomberg Center of Physics & Astronomy, Baltimore (MD), August 27-29, 2018. http://blackbird.pha.jhu.edu/lisa/

• *American Physical Society's April Meeting ("Quarks To Cosmos")*
Columbus (OH), April 14-17, 2018.
As Chair Elect of the American Physical Society's Division of Gravitational Physics (DGRAV), I was in charge of organizing the 39 sessions (including 13 invited sessions) sponsored by DGRAV.
http://www.aps.org/meetings/april/about.cfm

• *Strong Gravity and Binary Dynamics with Gravitational Wave Observations* **(principal organizer)**
University of Mississippi, Oxford (MS), February 27-March 2, 2017.
http://www.phy.olemiss.edu/StronGBaD/

• *Unifying Tests of General Relativity* Burke Institute Workshop **(co-organizer)**
California Institute of Technology, Pasadena (CA), July 19-21, 2016. Organizing Committee: Emanuele Berti, Phil Bull, Sean Carroll, Yanbei Chen, Olivier Doré, Jérôme Gleyzes, Leo C. Stein.
http://www.tapir.caltech.edu/~unifying-gr-tests/

• *Testing General Relativity with Astrophysical Observations* **(principal organizer)**
University of Mississippi, Oxford (MS), January 6-10 2014.
http://www.phy.olemiss.edu/TestGR2014/

• *Seventh Gulf Coast Gravity Meeting* **(principal organizer)**
University of Mississippi, Oxford (MS), April 19-20 2013.
http://www.phy.olemiss.edu/GCGM7/

• *LISA Symposium X* (member of SOC)
University of Florida, Gainesville, May 19-23 2014.
http://www.phys.ufl.edu/lisasymposiumx/

• *Gravitational Waves: Revolution in Astronomy and Astrophysics*
Yukawa Institute for Theoretical Physics, Kyoto University (Japan), May 26-Jun 14 2013.
http://www2.yukawa.kyoto-u.ac.jp/ws/2013/ykis2013/conference/conference.php

• *Science from the First Gravitational Wave Detections*
South Padre Island (TX), May 20-24 2013.
http://www.syntheticuniverse.org/html2/spi.html

• *NR meets 3PN (A Workshop on the Interface between Post-Newtonian Theory and Numerical Relativity)*
Washington University in Saint Louis, February 8-11 2007.
http://nrm3pn.wustl.edu

• *16th Midwest Relativity Meeting*
Washington University in Saint Louis, November 17-18 2006.

http://mwrm.wustl.edu/

- *NEB-X (10th Hellenic Relativity Conference)*
  Peninsula of Cassandra (Chalkidiki, Greece), May 30-June 2 2002.
  http://www.astro.auth.gr/gravity/NEB_X.html

Teaching experience

The following is a list of classes I taught so far. With the exception of the classes I taught before 2009, when I was a PhD student or a postdoc, I was the principal instructor for all courses.

Classes taught at Johns Hopkins University:

2018/2019 (Spring): **AS.171.708** (*Gravitational Waves*, undergraduate/graduate).
2019/2020 (Fall): **AS.171.646** (*General Relativity*, undergraduate/graduate).
2019/2020 (Spring): **AS.171.708** (*Gravitational Waves*, undergraduate/graduate).
2020/2021 (Fall): **AS.171.646** (*General Relativity*, undergraduate/graduate).
2020/2021 (Spring): **AS.171.708** (*Gravitational Waves*, undergraduate/graduate).
2021/2022 (Fall): **AS.171.646** (*General Relativity*, undergraduate/graduate).
2021/2022 (Spring): **AS.171.102** (*General Physics for Physical Science Majors II*, undergraduate).
2022/2023 (Fall): **AS.171.646** (*General Relativity*, undergraduate/graduate).
2022/2023 (Spring): **AS.171.708** (*Gravitational Waves*, undergraduate/graduate).
2023/2024 (Fall): **AS.171.646** (*General Relativity*, undergraduate/graduate).

Classes taught at the University of Mississippi:

2008/2009 (Spring): **Phys 308** (*Mathematical Physics*, undergraduate).
2008/2009 (Spring): **Phys 510** (*Research Seminar*, graduate).
2009/2010 (Fall): **Phys 551** (*Theoretical Physics I*, undergraduate/graduate).
2009/2010 (Fall): **Phys 510** (*Research Seminar*, graduate).
2009/2010 (Spring): **Phys 552** (*Theoretical Physics II*, undergraduate/graduate).
2009/2010 (Spring): **Phys 510** (*Research Seminar*, graduate).
2009/2010 (Spring): **Phys 629** (*Gravitation and Cosmology*, undergraduate/graduate).
2010/2011 (Fall): **Phys 211/221** (*Physics for Science and Engineering I*, undergraduate).
2010/2011 (Fall): **Phys 551** (*Mathematical Methods of Physics I*, undergraduate/graduate).
2010/2011 (Spring): **Phys 552** (*Mathematical Methods of Physics II*, undergraduate/graduate).
2011/2012 (Fall): **Phys 211/221** (*Physics for Science and Engineering I*, undergraduate).
2011/2012 (Fall): **Phys 551** (*Mathematical Methods of Physics I*, undergraduate/graduate).
2011/2012 (Spring): **Phys 552** (*Mathematical Methods of Physics II*, undergraduate/graduate).
2012/2013 (Fall): **Phys 551** (*Mathematical Methods of Physics I*, undergraduate/graduate).
2012/2013 (Spring): **Phys 552** (*Mathematical Methods of Physics II*, undergraduate/graduate).
2013/2014 (Fall): **Phys 551** (*Mathematical Methods of Physics I*, undergraduate/graduate).
2013/2014 (Spring): **Phys 552** (*Mathematical Methods of Physics II*, undergraduate/graduate).
2013/2014 (Spring): **Phys 629/630** (*Advanced Gravitational Physics*, graduate).
2014/2015 (Fall): **Phys 651** (*Mathematical Methods of Physics I*, undergraduate/graduate).
2014/2015 (Spring): **Phys 652** (*Mathematical Methods of Physics II*, undergraduate/graduate).
2016/2017 (Spring): **Phys 308** (*Mathematical Physics*, undergraduate).
2016/2017 (Fall): **Phys 709** (*Advanced Mechanics I*, graduate).
2017/2018 (Fall): **Phys 709** (*Advanced Mechanics I*, graduate).
2017/2018 (Spring): **Phys 750** (*Advanced Gravitational Physics*, graduate).

Classroom materials for my current classes, including syllabi, homework problems, midterm problems and solutions, are available on my homepage: `https://pages.jh.edu/~eberti2/`

Classes taught as a PhD student/postdoc:

1999/2000: **Physics for Biologists** (mechanics, thermodynamics and electromagnetism), University of Rome "La Sapienza" (with Valeria Ferrari).
2000/2001: **Physics for Biologists** (mechanics, thermodynamics and electromagnetism), University of Rome "La Sapienza" (with Valeria Ferrari).
2006/2007: **Physics 478** (*From Black Holes to the Big Bang* for undergraduates), Washington University in Saint Louis (instructor: Clifford M. Will). I taught classes on Kerr black holes and gravitational radiation.

Schools

• Invited lecture on "Black Hole Theory" at the international physics school for Ph.D. students and postdocs *General Relativity @99* (September 14-19, 2014) organized by Gerhard Schaefer and Clifford Will at the Physikzentrum Bad Honnef (Germany). The school involved about 20 lecturers and attracted about 80 students and postdocs, together with some scientists. My lecture notes for the school are available on the arXiv (see [L1] in my publication list).

• Invited lectures at the Summer School on Gravitational-Wave Astronomy organized by the International Center for Theoretical Sciences (Bangalore, India):
`https://www.icts.res.in/program/gws2016`
The two-week school (7/25/2016-8/5/2016) consisted of three graduate-level courses in gravitational-wave physics delivered by Clifford M. Will, Bangalore S. Sathyaprakash and myself. Lecture notes and supporting materials (including several Mathematica notebooks) are available at this URL:
`https://www.icts.res.in/event/page/3071`

Supervision of students and postdocs

I (co)supervised, or I am presently (co)supervising, the following students and postdocs. I highlight in red/boldface those that are presently under my supervision. In blue I highlight theses that received special recognition.

Undergraduate/master students:
Giuseppe Lavagetto (main advisor: Valeria Ferrari, Rome, 2000)
Giorgio Corsetti (main advisor: Valeria Ferrari, Rome, 2000)
Madalena Lemos (main advisor: Vitor Cardoso, Lisbon, 2010)
Barnabas Kipapa (University of Mississippi)
Davide Gerosa (supervised as LIGO REU Student visiting Caltech from the University of Milan, Italy in the Summer 2012, and as a visiting student at the University of Mississippi); obtained a Master *full marks cum laude* on 4/9/2013 at the University of Milan (Italy) under the joint supervision of myself and Prof. Giuseppe Lodato (Milan). PhD with Ulrich Sperhake at DAMTP, Cambridge (UK).
Davide's PhD thesis (with Sperhake as advisor) won the 2016 GWIC-Braccini Thesis Prize
Justin Alsing (supervised as LIGO REU Student visiting Caltech from Oxford, UK in the Summer 2011; PhD at Imperial College London under the supervision of Alan Heavens and Andrew Jaffe)
Zhongyang Zhang (University of Mississippi), graduated 2013
Kyle Sullivan (Johns Hopkins University)
David Carcamo (Johns Hopkins University)
Yancheng Li (Johns Hopkins University)
Junjia Zhang (Johns Hopkins University)
Kyle Schneider (Johns Hopkins University)
Zeyu Ma (Johns Hopkins University)

Graduate students:
Asimina Maniopoulou (main advisor: Nils Andersson, University of Southampton, 2004)
Frances White (main advisor: Marco Bruni, University of Portsmouth, 2004)
Michal Dominik (main advisor: Krzysztof Belczynski, University of Warsaw, Poland)
Hector Okada da Silva (University of Mississippi), Ph.D. 2017
Hector's thesis won the 2017 GWIC-Braccini Thesis Prize
Shrobana Ghosh (University of Mississippi), Ph.D. 2019
Kaze Wong (Johns Hopkins University), Ph.D. 2021
Kaze's thesis won the 2021 GWIC-Braccini Thesis Prize
Vishal Baibhav (Johns Hopkins University), Ph.D. 2021
Vishal's thesis won the 2022 Jürgen Ehlers Thesis Prize
Nicholas Speeney (Johns Hopkins University)
Vladimir Strokov (Johns Hopkins University)
Zipeng Wang (Johns Hopkins University)
Mesut Çalişkan (Johns Hopkins University) (coadvised with Marc Kamionkowski)
Mark H.Y. Cheung (Johns Hopkins University)
Veome Kapil (Johns Hopkins University)
Konstantinos Kritos (Johns Hopkins University)
Luca Reali (Johns Hopkins University)
Sophia Yi (Johns Hopkins University)
Aliaksandra (Sasha) Levina (Johns Hopkins University)

Postdocs:
Sayan Chakrabarti (cosupervised with Vitor Cardoso, IST Lisbon, Portugal)
Paolo Pani (cosupervised with Vitor Cardoso, IST Lisbon, Portugal)
Jocelyn Read (University of Mississippi, 2010-2012)
Michael Horbatsch (University of Mississippi, 2012-2014)
Antoine Klein (University of Mississippi, Dec 2013-Apr 2016; IST Lisbon, May 2016-Aug 2016)
Atsushi Nishizawa (University of Mississippi, Feb 2016-Dec 2016)
George Pappas (University of Mississippi, Aug 2015-Jul 2016; IST Lisbon, Sep 2016-Aug 2018)
Ryan McManus (Johns Hopkins University, Aug 2018-Jul 2020)
Félix-Louis Julié (Johns Hopkins University, Nov 2018-Oct 2021)
Thomas Helfer (Johns Hopkins University, Sep 2019-June 2023)
Roberto Cotesta (Johns Hopkins University, May 2021-May 2023)
Andrea Antonelli (Johns Hopkins University, Jan 2022-July 2023)
Ken K. Y. Ng (Miller Fellow at Johns Hopkins University, Sep 2022-present)
Thomas Edwards (Johns Hopkins University, Sep 2022-present)
Digvijay Wadekar (Johns Hopkins University, starting Sep 2024)
Francesco Iacovelli (Miller Fellow at Johns Hopkins University, starting Oct 2024)

Referee

Referee for the following journals: *Science*, *Nature*, *Physical Review X*, *Physical Review Letters*, *Physical Review D*, *Proceedings of the National Academy of Sciences*, *Classical and Quantum Gravity*, *Astrophysical Journal (Letters)*, *Monthly Notices of the Royal Astronomical Society (Letters)*, *Journal of High Energy Physics*, *General Relativity and Gravitation*, *Physics Reports*, *Reviews of Modern Physics*, *Physics Letters B*, *New Journal of Physics*, *International Journal of Modern Physics D*, *Canadian Journal of Physics*, *Modern Physics Letters A*, *Journal of Physics G: Nuclear and Particle Physics*, *Central European Journal of Physics*, *Physica Scripta*, *European Physical Journal C*, *Astrophysics and Space Science*, *Advances in Mathematical Physics*, *Journal of Physics: Conference Series*, *Communications in Computational Physics*, *Nuclear Physics B*, *Journal of Cosmology and Astroparticle Physics*

In 2011 I was selected as an **APS Outstanding Referee** by the editors of Physical Review and Physical Review Letters.
In 2016 I received the **IOP Outstanding Reviewer Award** "for the high quality and timeliness of your reviews for Classical and Quantum Gravity":

Editor

• Member of the Editorial Board (Divisional Associate Editor in Gravitational Physics) of *Physical Review Letters* (2/1/2017-1/31/2023).

• Associate Editor of *General Relativity and Gravitation* (2/2/2014-2/28/2022).

• Member of the *General Relativity and Gravitation* Golden Oldies Advisory Board (2020-present).

• Guest Editor for the *General Relativity and Gravitation* Topical Collection
"Testing the Kerr spacetime with gravitational-wave and electromagnetic observations".

Book Reviewer

I reviewed various book proposals for Princeton University Press, Cambridge University Press, Springer, and CRC Press.

Grant Proposal/Fellowship Reviewer

National Science Foundation (NSF, USA)
National Aeronautics and Space Administration (NASA, USA)
Sloan Foundation (USA)
Natural Sciences and Engineering Research Council of Canada (NSERC, Canada)
Cineca, Ministry of Universities and Research (MIUR, Italy)
Science and Technology Facilities Council (STFC, UK)
Deutsche Forschungsgemeinschaft (DFG, Germany)
Agence Nationale de la Recherche (ANR, France)
Netherlands Foundation for Fundamental Research on Matter (FOM, Netherlands)
Netherlands Organisation for Scientific Research (NWO, Netherlands)
Czech Science Foundation (Czech Republic)
Danmarks Frie Forksningsfond (Independent Research Fund) (Denmark)
National Science Centre (NCN, Poland)
Einstein Fellowship Committee Member (2011/2012)
Hubble Fellowship Committee Member (2019/2020)

Talks

2024

- *Wald at 40*,
  Celebration of the 40th anniversary of "General Relativity" by Robert Wald
  with David Garfinkle and Robert Wald.
  YouTube recording available, 6/12/2024. (online talk)
- *Nonlinear black hole spectroscopy*,
  Astrophysics Colloquium, University of Athens (Greece), 5/15/2024. (online talk)
- *General relativity, black holes, and how to see them*,
  Outreach talk at Maryvale Preparatory School, Baltimore (MD), 5/13/2024.
- Coordinator of the panel discussion *Cosmic Explorer connection with DOE science*,
  panelists: Jesse Thaler, Marc Kamionkowski, James Lattimer, Lindley Winslow,
  Second Cosmic Explorer Meeting, 4/25/2024. (online meeting)
- *Next-generation gravitational-wave astronomy*,
  Johns Hopkins University Society of Physics Students (SPS) Colloquium,
  Johns Hopkins University, Baltimore (MD), 4/19/2024.
- *Nonlinear black hole spectroscopy*,
  Physics Colloquium, The University of Texas at Dallas, Dallas (TX), 4/10/2024.
- *Nonlinear black hole spectroscopy*,
  APS April Meeting 2024, Sacramento (CA), 4/4/2024.
- *GWSpace2050: general relativity and fundamental physics update* (with Andrea Maselli),
  GWSpace2050 telecon, 3/25/2024. (online talk)
- *Nonlinear black hole spectroscopy*,
  Invited Talk at the Nishinomiya-Yukawa Symposium (GC2024),
  Yukawa Institute for Theoretical Physics, Kyoto (Japan), 2/13/2024.

2023

- *GWSpace2050: general relativity and fundamental physics*,
  GWSpace2050 telecon, 12/11/2023. (online talk)
- *Yvonne Choquet-Bruhat at 100*,
  a short video introduction for a conference in Vienna to honor Yvonne Choquet-Bruhat.
  YouTube recording available, 12/4/2023. (online talk)
- *Black hole physics (with LISA)*,
  Invited Talk at the GSFC-JHU Interaction Day,
  Johns Hopkins University (Baltimore, MD), 10/19/2023.
- *Hawking-Ellis at 50*,
  Celebration of the 50th anniversary of "The large scale structure of space-time"
  by Hawking and Ellis with David Garfinkle, George Ellis, and Abhay Ashtekar.
  YouTube recording available, 10/18/2023. (online talk)
- *Nonlinear black hole spectroscopy*,
  Invited Talk at the "Workshop on Nonlinear Aspects of General Relativity",
  Princeton Center for Theoretical Science (Princeton, NJ), 10/10/2023.
- *Fundamental physics from the Work Package perspective*,
  Invited Talk at the "LISA in Copenhagen" workshop (Copenhagen, Denmark), 8/9/2023.
- *Agnostic black hole spectroscopy*,

Gran Sasso Science Institute (L'Aquila, Italy), 7/24/2023.
- *General relativity, black holes, and how to see them*,
  Outreach talk at Maryvale Preparatory School, Baltimore (MD), 5/17/2023.
- *Exotic Compact Objects and the Fate of the Light-Ring Instability*,
  Physical Review Journal Club moderator, 5/4/2023. (online talk)
- *Misner-Thorne-Wheeler at 50*,
  Celebration of the 50th anniversary of "Gravitation" by Misner, Thorne and Wheeler
  with David Kaiser, Kip Thorne, and Charles Misner.
  YouTube recording available, 5/3/2023. (online talk)
- *Agnostic black hole spectroscopy*,
  Physics Colloquium, University of Virginia (Charlottesville, VA), 4/28/2023.
- *Next-generation gravitational-wave astronomy: challenges and opportunities*,
  Richard A. Isaacson Award in Gravitational-Wave Science Talk,
  2023 APS April Meeting, Minneapolis (MN), 4/17/2023.
- *Agnostic black hole spectroscopy*,
  Physics Colloquium, University of Illinois Urbana-Champaign (IL), 2/22/2023.
- *Next-generation gravitational-wave astronomy: challenges and opportunities*,
  University of British Columbia Astronomy Colloquium, Vancouver (CA), 1/23/2023.
- *Black hole spectroscopy: a status report*,
  Testing Gravity 2023 conference, SFU Harbour Center, Vancouver (Canada), 1/19/2023.
- *Gravitational waves and their sources*,
  Testing Gravity 2023 school, SFU Harbour Center, Vancouver (Canada), 1/18/2023.
- *Black hole spectroscopy: a status report*,
  Lanzhou University (China), 1/10/2023. (online talk)

2022

- *Black hole spectroscopy: a status report*,
  University of Southampton Seminars, Southampton (UK), 12/15/2022. (online talk)
- *Black hole spectroscopy: a status report*,
  Albert Einstein Institute Seminars, Potsdam (Germany), 11/23/2022. (online talk)
- *Compact binary foreground subtraction in next-generation ground-based detectors*,
  GW-CERN-UNIGE Meeting, CERN/University of Geneva (Switzerland), 11/22/2022. (online talk)
- *50th anniversary of the International Society on General Relativity and Gravitation*,
  introduction to a series of talks by Roberto Lalli, Virginia Trimble and Stanley Deser,
  YouTube recording available, 11/19/2022. (online talk)
- *Next-generation detectors: challenges and opportunities*,
  Northwestern University Astrophysics Seminar, 10/11/2022.
- *Black hole spectroscopy: are we there yet?*,
  Northwestern University Journal Club, 10/11/2022.
- *Building new tools for gravitational wave astronomy* (with Kaze Wong),
  American Physical Society Division of Gravitational Physics Seminar Series, 10/6/2022. (online talk)
- *Testing gravity with gravitational waves*,
  RESCEU Summer School 2022, School of Science, University of Tokyo (Japan), 8/19/2022.
  (online talk)
- *Gravitational wave astronomy: present and future*,
  Institute of Cosmology and Gravitation (ICG) Colloquium series, Portsmouth (UK), 6/16/2022.

(online talk)
- *The effect of mission duration on LISA science objectives*,
  LISA Community Call Special Topic Presentation, 6/13/2022. (online talk)
- *Tests of strong gravity and physics beyond the Standard Model*,
  "Fundamental Physics and Astrophysics with the Next Generation of Gravitational-Wave Detectors"
  Summer 2022 Workshop, Aspen (CO), 6/7/2022.
- *General relativity, black holes, and how to see them*,
  Outreach talk at Maryvale Preparatory School, Baltimore (MD), 5/17/2022.
- *Black hole spectroscopy*,
  Invited talk at the conference "Storming the Gravitational Wave Frontier" (gwaves-c22),
  Kavli Institute for Theoretical Physics, UC Santa Barbara, 4/21/2022. (online talk)
- *Gravitational wave astronomy: what's next?*,
  Invited talk at the APS April Meeting 2022, New York, 4/9/2022.
- *Black hole spectroscopy*,
  Johns Hopkins University Society of Physics Students (SPS), 4/1/2022.
- *Black hole spectroscopy*,
  Harvard's Center of Mathematical Sciences and Applications (CMSA) General Relativity Seminar,
  3/28/2022. (online talk)
- *Discussion: Tests of gravity with gravitational waves*,
  Panel Coordinator. "Recent progress on gravity tests" online meeting, 2/18/2022. (online panel)
- *Black hole spectroscopy: of fleas, elephants, and wiggling trunks*,
  Yukawa International Seminar (YKIS) 2022a "Gravity – The Next Generation", 2/18/2022. (online talk)
- *White Paper 3: Fundamental physics and beyond the Standard Model*,
  Snowmass CF7 Check Point Meeting, 2/3/2022. (online talk)

2021

- *The present and future of gravitational waves: astronomy and tests of general relativity*,
  Recent Advances in Theoretical Cosmology and Astrophysics, 12/16/2021. (online talk)
- *White Paper 3: Fundamental physics and beyond the Standard Model*,
  Snowmass CF7-day, 11/18/2021. (online talk)
- *Gravitational wave astronomy: peering deeper*,
  TÜBİTAK Scientific and Technological Research Council of Turkey, 10/14/2021. (online talk)
- *Observational science opportunities for next generation observatories: gravitational waves (alone)*,
  Dawn VI Meeting on Next Generation Observatories, 10/5/2021. (online talk)
- *Gravitational wave astronomy: what's next?*,
  NEB-19 Recent Developments in Gravity, Athens, 9/20/2021. (online talk)
- *Panel Discussion: Theory of Birth, Life and Death of Black Holes*,
  Panel Coordinator. Panelists:
  Ylva Götberg, Michela Mapelli, Deirdre Shoemaker, Asimina Arvanitaki, Alexander Tchekhovskoy.
  European Astronomical Society (EAS) Annual Meeting, 6/29/2021. (online panel)
- *Round table on how to manage a project/group and how to supervise students*,
  Panelist (with Vitor Cardoso, Michela Mapelli, Maria Alessandra Papa) at the
  "Gravitational Waves Early Career Scientists Funding Opportunity Workshop"
  for Advanced early career scientists, 6/22/2021. (online talk)
- *Testing the Kerr paradigm*,
  Quarks-2020 XXI International Seminar on High-energy Physics,

Online workshop "Modification of Gravity: Theory and Observations", 6/10/2021. (online talk)
- *Figures of merit*,
  Presentation to the LISA Consortium Meeting, 6/3/2021.
  (online talk - actually delivered by Alberto Sesana using my slides)
- *Figures of merit and waveforms*,
  Presentation to the LISA Waveform Working Group, 3/31/2021. (online talk)
- *Kerr black holes and beyond*,
  Universidad Nacional de Córdoba, Argentina, 3/18/2021. (online talk)
- *Kerr black holes and beyond*,
  Seminar at Washington University in Saint Louis, Saint Louis (MO), 3/12/2021. (online talk)
- Coordinator of the discussion session *Astrophysical scenarios for gravitational-wave events, hierarchical mergers, and (primordial black hole) merger rates*,
  "Primordial black holes confront gravitational-wave data" workshop, Rome (Italy), 2/10/2021.
  (online meeting)
- *The LISA Science Interpretation Work Package*,
  HopBham online workshop, 1/28/2021. (online talk)

2020

- *Black hole quasinormal modes: from Vishveshwara to the gravitational-wave astronomy era*,
  31st meeting of the Indian Association for General Relativity and Gravitation (IAGRG),
  Discipline of Physics, IIT Gandhinagar (India), 12/19/2020. (online talk)
- *The 2020 Nobel Prize in physics*,
  University of Tübingen (Germany), 12/9/2020. (online talk)
- *Kerr black holes and beyond*,
  Black Hole PIRE Project Webinar,
  University of Arizona, Tucson (AZ), 11/24/2020. (online talk)
- Coordinator (with Salvatore Vitale) of the discussion session on *Binary Formation*,
  First Cosmic Explorer Meeting, 10/28/2020. (online meeting)
- *Gravitational-wave astronomy and astrophysics*,
  Physics & Astronomy Cosmology Seminar,
  Dartmouth College, Hanover (NH), 10/15/2020. (online talk)
- *Challenges for numerical relativity and gravitational-wave source modeling*,
  ICERM Workshop "Advances and challenges in computational relativity",
  Brown University, Providence (RI), 9/14/2020. (online talk)
- *Astrophysics with gravitational-wave observations of black-hole binaries*,
  Institute for Advanced Study Astrophysics Seminar, Princeton (NJ), 9/10/2020. (online talk)
- *Effective field theory, black hole perturbation theory and gravitational waves*,
  KITP Conference "Probing effective theories of gravity in strong fields and cosmology",
  Kavli Institute for Theoretical Physics, Santa Barbara (CA), 8/26/2020. (online talk)
- *Black holes and gravitational waves*,
  Space Telescope Science Institute Summer Research Talk Series for Undergraduates,
  Baltimore (MD), 7/14/2020. (online talk)

2019

- *Gravitational waves from compact binaries: implications for fundamental physics and astrophysics*, Department of Physics & Astronomy Colloquium Series, University of Maine, Orono (ME), 11/15/2019.
- *A new dawn: gravitational wave observations from Earth and in space*, Emera Astronomy Center & Jordan Planetarium, Orono (ME), 11/14/2019.
- *Gravitational wave astronomy with LISA*, 2019 JSI Workshop: The New Faces of Black Holes, Annapolis (MD), 11/11/2019.
- *Black hole scalarization and parametrized black hole ringdown*, Fundamental Theory Seminar, Pennsylvania State University, State College (PA), 11/1/2019.
- *Physics and astrophysics with gravitational-wave observations of black hole binaries*, Physics Colloquium, Pennsylvania State University, State College (PA), 10/31/2019.
- *Black holes: from LIGO to LISA*, 2019 GSFC-JHU Interaction Day, Johns Hopkins University, Baltimore (MD), 10/18/2019.
- *Gravitational-waves: astronomy, tests of gravity, new physics*, Talk for the JHU Society of Physics Students, Johns Hopkins University, Baltimore (MD), 10/11/2019.
- *Black holes and gravitational waves*, Space Telescope Science Institute Public Lecture Series, Johns Hopkins University, Baltimore (MD), 10/1/2019.
- *Buchi neri e onde gravitazionali*, "Notte dei ricercatori", Liceo Scientifico Ruffini, Viterbo (Italy), 9/27/2019.
- *Gravitational wave astronomy: achievements and challenges*, Department of Physics and Astronomy Colloquium Series, Johns Hopkins University, Baltimore (MD), 9/12/2019.
- *Parametrized black hole ringdown and black hole scalarization*, "Simons program: Current themes in high-energy physics and cosmology – Physics and astrophysics in the era of gravitational wave detection" workshop, Niels Bohr Institute, Copenhagen, 8/21/2019.
- *Parametrized black hole ringdown and black hole scalarization*, Amaldi Research Center, Rome "Sapienza" (Italy), 7/18/2019.
- *Parametrized black hole quasinormal ringdown*, GR22/Amaldi13 (22nd International Conference on General Relativity and Gravitation and 13th Edoardo Amaldi Conference on Gravitational Waves), Valencia (Spain), 7/11/2019.
- *Spontaneous black hole scalarization*, GR22/Amaldi13 (22nd International Conference on General Relativity and Gravitation and 13th Edoardo Amaldi Conference on Gravitational Waves), Valencia (Spain), 7/9/2019.
- *Strong gravity and new physics with LISA*, KITP Conference "Merging Visions: Exploring Compact-Object Binaries with Gravity and Light", Kavli Institute for Theoretical Physics, Santa Barbara (CA), 6/27/2019.
- *On multiband GW astronomy: What are we learning from gravitational wave observations of merging binaries, and what do we need to learn more?*, KITP Workshop "The New Era of Gravitational-Wave Physics and Astrophysics", Kavli Institute for Theoretical Physics, Santa Barbara (CA), 6/18/2019. Available online at `http://online.kitp.ucsb.edu/online/gravast19/berti/`
- *Physics and astrophysics with low-frequency gravitational waves from black hole binaries*, Invited talk at the Black Hole Initiative Conference, Harvard University, Cambridge (MA), 5/20/2019.
- *Low-frequency gravitational waves from massive black holes:*

implications for fundamental physics and astrophysics,
Invited talk and press conference, APS April Meeting 2019, Denver (CO), 4/15/2019.
- *Ultralight boson detection with gravitational waves*,
Invited seminar, University of Maryland, College Park (MD), 3/27/2019.
- *Synergy between Europe and USA*,
"Enabling LISA Science Exploitation" workshop, Leiden (Netherlands), 3/7/2019.
- *LISA Science Group: Work Package 8 (Interpretation, key-science projects)*,
"Enabling LISA Science Exploitation" workshop, Leiden (Netherlands), 3/4/2019.
- *Spin orientations of merging black holes formed from the evolution of stellar binaries*,
Meeting of the COST Action "Gravitational Waves, Black Holes and Fundamental Physics",
Athens (Greece), 1/22/2019.
- *Tests of gravity with LISA*,
Tests of Gravity workshop, University of Athens (Greece), 1/18/2019.

2018

- *A new dawn: gravitational-wave observations of binary systems on the ground and in space*,
Amaldi Research Center, Rome "Sapienza" (Italy), 11/15/2018.
- Coordinator (with Diego Blas, Clare Burrage and Kent Yagi) of the discussion session
Inferences in theoretical physics, "Fundamental Physics with LISA" workshop,
Galileo Galilei Institute for Theoretical Physics, Arcetri, Firenze (Italy), 11/13/2018.
- *Gravitational waves and black holes*,
GSFC/JHU Interaction Day, NASA Goddard, Greenbelt (MD), 10/26/2018.
- *A new dawn: gravitational-wave observations of binary systems on the ground and in space*,
Yale Astronomy & Astrophysics Colloquium, New Haven (CT), 9/27/2018.
- *Spin precession and binary black hole archaeology*,
Astro Coffee, Johns Hopkins University, Baltimore (MD), 9/24/2018.
- *Spin precession and binary black hole archaeology*,
Group meeting talk, Johns Hopkins University, Baltimore (MD), 9/19/2018.
- *A new dawn: gravitational-wave observations of binary systems on the ground and in space*,
Astrophysics Colloquium, NASA Goddard, Greenbelt (MD), 9/18/2018.
- *Black holes, neutron stars and gravitational wave astronomy (part 2)*,
QuarkNet LIGO Workshop, Johns Hopkins University, Baltimore (MD), 7/26/2018.
- *Black holes, neutron stars and gravitational wave astronomy (part 1)*,
QuarkNet LIGO Workshop, Johns Hopkins University, Baltimore (MD), 7/25/2018.
- *Gravitational wave astronomy*,
Space Astronomy Summer Program, Space Telescope Science Institute, Baltimore (MD), 7/23/2018.
- *Constraining stellar binary black hole formation scenarios with LISA eccentricity measurements*,
LISA Symposium XII (Chicago, IL), 7/13/2018.
- *Strong gravity and astrophysics with compact binaries at the dawn of gravitational-wave astronomy*,
Colloquium at the Department of Physics and Astronomy, The University of Mississippi,
Oxford (MS), 5/1/2018.
- *Gravitational wave searches for ultralight bosons with LIGO and LISA*,
APS April Meeting 2018, Columbus (OH), 4/15/2018.
- *What will LISA reveal about black hole astrophysics?*,
Gravitational Wave SIG Minisymposium, APS April Meeting 2018, Columbus (OH), 4/14/2018.
- *Gravitational wave astronomy, strong gravity and new physics*,

YKIS2018a Symposium "General relativity: The next generation",
Yukawa Institute for Theoretical Physics, Kyoto (Japan), 2/23/2018.

2017

- *Spin precession, spin-orbit resonances, spin alignment and (stellar mass) BH binary formation*, "Astrophysics of Gravitational Radiation Sources and Multimessenger Astronomy in the Era of LIGO Detections" workshop, Aspen Center For Physics, 7/19/2017.
- Coordinator (with Carlos Sopuerta) of the discussion session *Future of gravitational wave detections*, "Strong Gravity Universe" workshop, São Miguel (Azores), 7/3/2017.
- *Strong gravity tests and searches for new physics with gravitational wave detectors*, Invited talk at the European Week of Astronomy and Space Science (EWASS), Prague (Czech Republic), 6/27/2017.
- *Gravitational waves after the first detections*, Round table coordinator at the workshop "New Frontiers in Gravitational Wave Astrophysics", Rome "Sapienza" (Italy), 6/19/2017.
- *Tests of strong gravity and new physics with gravitational waves*, Invited colloquium, DAMTP/CMS, Cambridge (UK), 5/31/2017.
- *Testing the Kerr paradigm with gravitational wave observations*, Invited talk at the Black Hole Initiative Conference, Harvard University, Cambridge (MA), 5/8/2017.
- *Astrophysics, tests of strong gravity and new physics with gravitational-wave astronomy*, Portsmouth (UK), 4/18/2017.
- *Tests of strong gravity and new physics with gravitational-wave astronomy*, Johns Hopkins University, Baltimore (MD), 2/13/2017.
- *Constraining stellar binary black hole formation scenarios with LISA eccentricity measurements*, APS April Meeting 2017, Washington DC, 1/30/2017.
- *Spectroscopy of Kerr black holes with Earth- and space-based interferometers*, APS April Meeting 2017, Washington DC, 1/29/2017.

2016

- Coordinator (with Paolo Pani) of the discussion session *Testing the Black Hole Paradigm with Gravitational Waves* at the "GW161212: The Universe through gravitational waves" workshop, Simons Center for Geometry and Physics (NY), 12/14/2016.
- *Strong gravity and astrophysics with compact binaries at the dawn of gravitational-wave astronomy*, Invited Theory Seminar, Columbia University (New York), 12/5/2016.
- Member of the discussion panel *TG1 - Testing Gravity* at the "Physics and Astrophysics at the eXtreme" (PAX) workshop, State College (PA), 12/1/2016.
- *Black holes and gravitational waves (we did it!)*, Outreach Talk at Alcorn State University, Alcorn (MS), 10/20/2016.
- *Complementarity of Earth- and space-based detectors: binary populations and tests of strong gravity*, GR21, Columbia University, New York, 7/13/2016.
- *Strong gravity and astrophysics with compact binaries at the dawn of gravitational-wave astronomy*, Invited talk, Southampton (UK), 6/2/2016.
- *Strong gravity and astrophysics with compact binaries at the dawn of gravitational-wave astronomy*, Invited talk, Institute of Cosmology and Gravitation, Portsmouth (UK), 6/1/2016.
- *Tests of modified gravity with gravitational-wave observations*, Group meeting talk, Institute of Cosmology and Gravitation, Portsmouth (UK), 6/1/2016.

• *Ultrarelativistic unequal-mass black hole collisions*,
APS April Meeting 2016, Salt Lake City (UT), 4/18/2016.
• *Alternative theories of gravity, novel physics around compact objects*,
Invited Talk and Discussion Session coordination, GR100++ Workshop, Princeton (NJ), 4/8/2016.

2015

• *Tests of strong gravity with compact objects*,
Invited TAPIR Seminar, California Institute of Technology, Pasadena (CA), 10/16/2015.
• *Gravity, black holes, gravitational waves and all that*,
Outreach Talk at Mississippi Delta Community College, Oxford (MS), 9/30/2015.
• *Astrophysical tests of general relativity*,
Invited Talk at the workshop "Gravity @ all scales", Nottingham (UK), 8/24/2015.
• *New frontiers in scalar-tensor theory*,
Discussion Session coordinator, IV$^{\rm th}$ NRHEP Network Meeting,
Physics Department, University of Rome "Sapienza", Rome (Italy), 7/9/2015.
• *Astrophysical tests of general relativity*,
Invited Colloquium at the Physics Department, University of Rome "Sapienza", Rome (Italy), 7/8/2015.
• *Gravitational waves and tests of general relativity*,
Invited Lecture at the 8$^{\rm th}$ Aegean Summer School "Gravitational Waves: From Theory to Observations",
Rethymno (Greece), 6/29/2015.
• *Neutron stars as probes of strong-field gravity*,
Invited Talk at the workshop "One Hundred Years of Strong Gravity",
Instituto Superior Técnico, Lisbon (Portugal), 6/12/2015.
• *Spontaneous scalarization: dead or alive?*,
April APS Meeting 2015, Baltimore (MD), 4/11/2015.
• *Black Holes*, Outreach Talk at Mississippi Delta Community College,
Moorhead (MS), 3/16/2015.
• *Gravitational Waves*, Outreach Talk at Mississippi Delta Community College, Moorhead (MS), 3/16/2015.
• *Tests of strong gravity: what will astrophysics ever do for us?*,
Invited talk at the workshop "Compact Objects as Astrophysical and Gravitational Probes",
Leiden (Netherlands), 2/4/2015.

2014

• *A black hole theory primer: Particles, waves, critical phenomena and superradiant instabilities*,
Invited Lecture at the DPG Physics School on General Relativity @ 99 (Bad Honnef, Germany), 9/16/2014.
Lecture notes available online at `https://arxiv.org/abs/1410.4481`
• *Testing strong-field gravity with space-based detectors*,
LISA Symposium X (Gainesville, Florida), 5/21/2014.
• *Fundamental physics and astrophysics of compact-binary mergers*,
558th WE-Heraeus-Seminar "The Strong Gravity Regime of Black Holes and Neutron Stars",
Physikzentrum Bad Honnef (Germany), 4/4/2014.
• *Fundamental physics and astrophysics of compact-binary mergers*,
Invited Colloquium, SISSA, Trieste (Italy), 3/11/2014.

2013

- *Physics and astrophysics with gravitational-wave observations: opportunities and challenges*, Group Meeting Presentation, Louisiana State University, Baton Rouge (LA), 11/8/2013.
- *Physics and astrophysics with gravitational-wave observations*, Invited Physics Colloquium, Louisiana State University, Baton Rouge (LA), 11/7/2013.
- *Astrophysical tests of general relativity and fundamental physics*, Meeting of the "Italian Scientists and Scholars in North America Foundation" (ISSNAF), Italian Embassy, Washington DC, 10/29/2013.
- *Black Holes* and *Gravitational Waves*, Two Outreach Talks at Rust College, Holly Springs (MS), 10/9/2013.
- *Compact objects as probes of gravitational physics*, Yukawa Long-term Workshop (*Gravitational Waves and Numerical Relativity*), Yukawa Institute for Theoretical Physics, Kyoto (Japan), 6/17/2013.
- *(Astro)physics with the first gravitational-wave detections*, Yukawa International Seminar 2013 (*Gravitational Waves: Revolution in Astronomy and Astrophysics*), Yukawa Institute for Theoretical Physics, Kyoto (Japan), 6/6/2013.
- *Gravitational Waves as a probe of fundamental physics*, NASA Astrophysics Roadmap Town Hall Meeting, 5/6/2013.
- *Spin alignment as a diagnostic of black-hole binary formation*, 7th Gulf Coast Gravity Meeting, Oxford (MS), 4/19/2013.
- *Black holes and gravitational waves: theory and experiments*, Boeing Distinguished Research and Scholar Seminar (b-DRASS), El Segundo (CA), 1/9/2013.

2012

- *Astrophysical Tests of General Relativity in the Strong-Field Regime*, Plenary Talk at the 26th Texas Symposium on Relativistic Astrophysics, São Paulo (Brazil), 12/18/2012.
- *Black Holes*, Outreach Talk at Jackson State University, Jackson (MS), 11/8/2012.
- *Gravitational Waves*, Outreach Talk at Jackson State University, Jackson (MS), 10/18/2012.
- Member (with Chad Hanna, Andrew MacFadyen, Larry Price and Alicia Soderberg) of the Discussion Panel at the Workshop *Rattle and Shine: Gravitational Wave and Electromagnetic Studies of Compact Binary Mergers*, Kavli Institute for Theoretical Physics, Santa Barbara (CA), 7/30/2012-8/3/2012.
- *Astrophysical tests of general relativity and black hole bombs*, NEB 15 (Recent Developments in Gravity), Technological Educational Institute of Crete, Chania (Greece), 6/20/2012.
- *Testing general relativity with black hole quasinormal modes and massive scalar-tensor theories*, Harvard Sackler Conference (Seventh Harvard-Smithsonian Conference on Theoretical Astrophysics) on Testing General Relativity with Astrophysical Systems, Boston (MA), 5/16/2012.
- *Modified gravity and scalar fields: where should we look?*, APS April Meeting 2012, Atlanta (GA), 4/1/2012.
- *Black Holes*, Outreach Talk at Tougaloo College (MS), 3/26/2012.
- *Gravitational Waves*, Outreach Talk at Tougaloo College (MS), 3/19/2012.

2011

- *New adventures in testing Einstein's general relativity*,
  Department of Physics and Astronomy, University of Alabama, Tuscaloosa (Alabama), 10/19/2011.
- *New LISA: what's new?*,
  Institute of Space Sciences (CSIC-IEEC), Campus UAB, Barcelona (Spain), 7/28/2011.
- *A census of massive black holes with space-based gravitational-wave detectors (or: Reports of LISA's death are greatly exaggerated)*,
  TAPIR Group Meeting, California Institute of Technology, Pasadena (CA), 5/19/2011.
- *A census of massive black holes with space-based gravitational-wave detectors (or: Reports of LISA's death are greatly exaggerated)*,
  6th Gulf Coast Gravity Meeting, Florida Atlantic University, Boca Raton (FL), 5/15/2011.

2010

- *Physics and astrophysics of compact binaries: present and future*,
  Pará University, Belém (Brazil), 12/20/2010.
- *The interface between numerical relativity and data analysis: open problems*,
  8th International LISA Symposium, Stanford University (CA), 7/1/2010.
- Member (with Eric Poisson, Scott Hughes and Patrick Brady) of the Discussion Panel at the Workshop *Theory Meets Data Analysis at Comparable and Extreme Mass Ratios (Capra+NRDA)*,
  Perimeter Institute, Waterloo, Canada (7/20-26/2010).

2009

- *Spin as a tracer of massive black hole evolution*,
  Astrophysics Seminar, UC Irvine (CA), 12/1/2009.
- *Spin as a tracer of massive black hole evolution*,
  NASA GSFC Astrophysics Science Division Colloquium,
  Goddard Space Flight Center, Greenbelt (Maryland), 11/3/2009.
- *Spin as a tracer of massive black hole evolution*,
  Workshop on Massive Black Hole Binaries and Their Coalescence in Galactic Nuclei,
  KIAA, Peking University, Beijing (China), 7/23/2009.
- *Gravitational-wave spin measurements and massive black hole evolution*,
  CENTRA, Lisbon (Portugal), 7/9/2009.
- *Gravitational waves from black hole mergers*,
  Multi-Messenger Relativistic Astrophysics 2009,
  Inaugural Conference of the Center for Relativistic Astrophysics,
  Georgia Tech, Atlanta (GA), 5/20/2009.
- *The gravitational and high-energy theory group at Ole Miss*,
  Presentation for the Society of Physics Students, The University of Mississippi,
  Oxford (MS), 3/5/2009.

2008

- *Ultrarelativistic binary black hole mergers*,
  Relativistic Astrophysics Group Meeting, Jet Propulsion Laboratory,
  Pasadena (CA), 11/14/2008.

- *Ultrarelativistic binary black hole mergers*,
  TAPIR Postdoc Lunch Talk, California Institute of Technology,
  Pasadena (CA), 11/12/2008.
- *Cosmological black hole spin evolution by mergers and accretion: Implications for gravitational wave astronomy*,
  2008 Theoretical Astrophysics in Southern California (TASC) Meeting,
  University of California at Irvine (CA), 10/24/2008.
- *Gravitational wave astronomy and fundamental physics*,
  Colloquium at the Department of Physics, University of Guelph,
  Guelph (Canada), 5/21/2008.
- *Gravitational wave astronomy*,
  Colloquium at the Department of Physics and Astronomy, The University of Mississippi,
  Oxford (MS), 4/18/2008.
- *Post-Newtonian diagnostics for initial data*,
  invited talk at the APS April Meeting 2008,
  Saint Louis (MO), 4/12-15/2008.
- *Cosmological black hole spin evolution by mergers and accretion: Implications for gravitational wave astronomy*,
  High Energy Astrophysics Division (HEAD) Meeting of the American Astronomical Society,
  Los Angeles (CA), 3/31/2008.
- *Linking numerical relativity to gravitational-wave astronomy*,
  Seminar at the Center for Computational Relativity and Gravitation, Rochester Institute of Technology,
  Rochester (New York), 3/7/2008.
- *Synergy of analytical and numerical relativity: prospects for astrophysics and gravitational-wave detection*, Seminar at Washington University in Saint Louis (MO), 2/28/2008.
- *Gravitational wave astronomy*,
  Colloquium at Washington University in Saint Louis (MO), 2/27/2008.
- Coordinator (with Larry Kidder) of the discussion session on *Interfacing post-Newtonian theory, numerical relativity and perturbation theory* at the KITP Miniprogram *Interplay between Numerical Relativity and Data Analysis*, Kavli Institute for Theoretical Physics, Santa Barbara (CA), 1/7/2008-1/18/2008. See `http://www.kitp.ucsb.edu/activities/auto2/?id=944`

2007

- *Gravitational waves from binary black hole mergers: implications for astrophysics and fundamental physics*, Dipartimento di Fisica, Universitá di Roma "La Sapienza", Rome (Italy), 12/19/2007.
- *Black hole binary mergers and black hole spectroscopy*,
  CaJAGWR seminar, California Institute of Technology, Pasadena (CA), 4/12/2007.
- *Post-Newtonian diagnosis of compact binary inspirals*,
  Relativistic Astrophysics group meeting, Jet Propulsion Laboratory, Pasadena (CA), 9/7/2007.
- *Analytical insights into numerical simulations of compact binaries*,
  GRϵCO seminar at the Institut d'Astrophysique de Paris (France), 7/26/2007 and 7/27/2007.
- *Gravitational waves from binary black hole mergers*,
  Institute for Astronomy and Astrophysics, Tübingen (Germany), 7/9/2007.
- *The inspiral-merger-ringdown transition in unequal-mass black hole binaries*,
  NR meets 3PN (A Workshop on the Interface between Post-Newtonian Theory and Numerical Relativity), Washington University in Saint Louis (MO), 2/8/2007–2/11/2007.

• *Gravitational waves and alternative gravity theories*,
Rethinking Gravity: From the Planck Scale to the size of the Universe, Tucson (AZ),
1/22/2007–1/24/2007.

2006

• *Gravitational wave astronomy*,
Gravitational and High-Energy Theory Group, Oxford (MS), 10/10/2006.
• *Gravitational wave astronomy*,
Emerging Themes in Physics (Workshop for Young Scientists), Austin (TX), 10/5/2006–10/6/2006.
• *Waveform models and parameter estimation for intermediate mass ratio inspirals*,
LISA Astro-GR@AEI (EMRIs and IMRIs), Golm (Germany), 9/18/2006–9/22/2006.
• *Supermassive black hole (astro)physics and tests of general relativity with LISA*,
Physikalisch-Astronomische Fakultät der Friedrich-Schiller-Universität, Jena (Germany), 9/14/2006.
• *Measuring supermassive black hole parameters with LISA*,
Physics and Astrophysics of Supermassive Black Holes, Santa Fe (New Mexico), 7/10/2006–7/14/2006.
• *Black hole spectroscopy with LISA*,
6th International LISA symposium, Goddard Space Flight Center, Greenbelt (Maryland),
6/19/2006–6/23/2006.
• *Post-Newtonian diagnostic of compact binaries in quasiequilibrium*,
Astrophysical Applications of Numerical Relativity, Guanajuato (Mexico), 5/6/2006–5/11/2006.
• *Massive black hole mergers: waveform modelling and parameter estimation*,
Astrophysical Applications of Numerical Relativity, Guanajuato (Mexico), 5/6/2006–5/11/2006.
• *Tests of general relativity with LISA*,
Politecnico di Torino (Italy), 1/12/2006.
• *Tests of general relativity with LISA*,
Dipartimento di Fisica dell'Universitá di Tor Vergata, Roma (Italy), 1/9/2006.

2005

• *Supermassive black hole binaries*,
10th Gravitational Wave Data Analysis Workshop, Brownsville (TX), 12/15/2005–12/18/2005.
• *Taking black hole fingerprints with LISA*,
Department of Physics and Astronomy, Louisiana State University, Baton Rouge (USA), 11/10/2005.
• *The quasinormal spectrum of black holes*,
Center for Computation and Technology, Louisiana State University, Baton Rouge (USA), 11/8/2005.
• *Testing general relativity with LISA*,
7th Astronomy Conference of the Hellenic Astronomical Society,
Lixourion, Kefallinia Island (Greece), 9/8/2005–9/11/2005.
• *Binary parameter estimation and detection of ringdown waves with LISA*,
Albert Einstein Century Conference, Paris (France), 7/18/2005–7/22/2005.
• *What will LISA tell us about black hole physics?*,
Black Holes V, Banff (Canada), 5/13/2005–5/18/2005.
• *Estimating spinning binary parameters and testing alternative theories of gravity with LISA*,
Center for Gravitational Physics and Geometry, Pennsylvania State University,
State College (USA), 4/14/2005.

2004

- *Black hole quasinormal modes and the area quantum*,
  Quantum General Relativity session, GR17, Dublin (Ireland), 7/18/2004–7/23/2004.
- *Rotating neutron stars: an invariant comparison of approximate and numerical spacetime models*,
  Relativistic Astrophysics session, GR17, Dublin (Ireland), 7/18/2004–7/23/2004.
- *Black hole quasinormal modes: recent developments and new applications*,
  NEB-XI (11th Hellenic Relativity Conference), Department of Marine Sciences,
  University of the Aegean, Lesbos (Greece), 6/2/2004–6/5/2004.
- *Black hole quasinormal modes: hints of quantum gravity?*,
  Workshop on Dynamics and Thermodynamics of Black Holes and Naked Singularities,
  Dipartimento di Matematica, Politecnico di Milano (Italy), 5/13/2004–5/15/2004.
- *Rotating relativistic stars and rotating black holes*,
  Invited talk at the LUTH (Laboratoire de l'Univers et de ses Théories),
  Observatoire de Paris-Meudon (France), 3/17/2004.

2003

- *Black hole perturbation theory, the area quantum and large extra dimensions*,
  GRϵCO seminar at the Institut d'Astrophysique de Paris (France), 10/30/2003.
- *Black hole quasinormal modes and the area quantum*,
  5th Meeting and Advanced School of the EU Network on *Sources of Gravitational Waves*,
  Trieste (Italy), 9/15/2003–9/26/2003.
- *What do classical black hole oscillations tell us about their quantum properties?*,
  Institute of Cosmology and Gravitation, Portsmouth (UK), 9/8/2003.
- *Black hole oscillations and stability*,
  Institute of Cosmology and Gravitation, Portsmouth (UK), 2/18/2003.

2002

- *Towards the computation of quasinormal modes for rapidly rotating compact stars*,
  4th Meeting of the EU Network on *Sources of Gravitational Waves*,
  Palma de Mallorca (Spain), 9/26/2002–9/28/2002.
- *Gravitational waves from neutron star binaries*,
  NEB-X (10th Hellenic Relativity Conference),
  Peninsula of Cassandra (Chalkidiki, Greece), 5/30/2002-6/2/2002.
- *Gravitational waves from pulsating stars and stars in binary systems*,
  Aristotle University of Thessaloniki, 3/12/2002.
- *Scattering processes in coalescing binary systems*,
  3rd Meeting of the EU Network on *Sources of Gravitational Waves*,
  Southampton (England), 1/31/2002-2/3/2002.

2001

- *Perturbative formalisms for binary neutron stars*,
  2nd Meeting of the EU Network on *Sources of Gravitational Waves*,
  Peninsula of Cassandra (Chalkidiki, Greece), 6/6/2001-6/10/2001.

2000

- *Gravitational waves emitted by binary systems*,
  Talk given on 11/29/2000 during a two-week visit at Stony Brook University, New York, USA.
- *Gravitational waves emitted by extrasolar planetary systems*,
  Conference on *Gravitational waves: a challenge to Theoretical Astrophysics*,
  ICTP (International Center for Theoretical Physics), Trieste, Italy (Jun 2000).
- *Gravitational waves emitted by extrasolar planetary systems*,
  Conferenza Nazionale di Fisica Teorica, IIASS (International Institute for Advanced Scientific Studies),
  Vietri sul Mare (Salerno), Italy (Apr 2000).

Publications

Publications are listed in reverse chronological order. Updated citation metrics, as well as links to the arXiv and published versions can be found in InSpire, NASA ADS and Google Scholar. According to Google Scholar, my papers collected over $33,000$ citations, with a Hirsch index $h = 96$. I highlight in boldface papers that were published as Letters (in Physical Review Letters, Astrophysical Journal Letters or Nature Astronomy Letters), and in red (italic) papers that received special recognition or were mentioned in the press.

Articles in Refereed Journals

A206. H. Zhong, B. Zhou, L. Reali, E. Berti, V. Mandic, *Notching out resolvable compact binary foregrounds to search for cosmological stochastic backgrounds with next-generation gravitational-wave detectors*, https://arxiv.org/abs/2406.10757

A205. L. Reali, R. Cotesta, A. Antonelli, K. Kritos, V. Strokov, E. Berti, *Intermediate-mass black hole binary parameter estimation with next-generation ground-based detector networks*, https://arxiv.org/abs/2406.01687

A204. R. Ebadi, V. Strokov, E. H. Tanin, E. Berti, R. L. Walsworth, *LISA double white dwarf binaries as Galactic accelerometers*, https://arxiv.org/abs/2405.13109

A203. M. Richartz, J. L. Rosa, E. Berti, *Bounds on the mass of superradiantly unstable scalar fields around Kerr black holes*, https://arxiv.org/abs/2405.01003

A202. K. Kritos, E. Berti, J. Silk, *Supermassive black holes from runaway mergers and accretion in nuclear star clusters*, MNRAS **531**, 133 (2024). https://arxiv.org/abs/2404.11676

A201. E. Berti, V. De Luca, L. Del Grosso, P. Pani, *Tidal Love numbers and approximate universal relations for fermion soliton stars*, Phys. Rev. D **109**, 124008 (2024). https://arxiv.org/abs/2404.06979

A200. V. Kapil, L. Reali, R. Cotesta, E. Berti, *Systematic bias from waveform modeling for binary black hole populations in next-generation gravitational wave detectors*, Phys. Rev. D **109**, 104043 (2024). https://arxiv.org/abs/2404.00090

A199. M. H.-Y. Cheung, K. K. Y. Ng, M. Zumalacárregui, E. Berti, *Probing minihalo lenses with diffracted gravitational waves*, Phys. Rev. D **109**, 124020 (2024). https://arxiv.org/abs/2403.13876

A198. S. Yi, A. Kuntz, E. Barausse, E. Berti, M. H.-Y. Cheung, K. Kritos, A. Maselli, *Nonlinear quasinormal mode detectability with next-generation gravitational wave detectors*, Phys. Rev. D **109**, 124029 (2024). https://arxiv.org/abs/2403.09767

A197. Z. Wang, T. Helfer, D. Traykova, K. Clough, E. Berti, *Gravitational Magnus effect from scalar dark matter*, https://arxiv.org/abs/2402.07977

A196. G. Franciolini, K. Kritos, L. Reali, F. Broekgaarden, E. Berti, *Beyond the far side: Observing black hole mergers beyond the pair-instability mass gap with next-generation gravitational wave detectors*, https://arxiv.org/abs/2401.13038

A195. N. Speeney, E. Berti, V. Cardoso, A. Maselli, *Black holes surrounded by generic matter distributions: polar perturbations and energy flux*, Phys. Rev. D **109**, 084068 (2024). https://arxiv.org/abs/2401.00932

A194. V. Strokov, E. Berti, *Quasimonochromatic LISA Sources in the frequency domain*, Phys. Rev. D **109**, 104013 (2024). https://arxiv.org/abs/2312.00121

A193. A. Maselli, S. Yi, L. Pierini, V. Vellucci, L. Reali, L. Gualtieri, E. Berti, *Black hole spectroscopy beyond Kerr: agnostic and theory-based tests with next-generation interferometers*, Phys. Rev. D **109**, 064060 (2024). https://arxiv.org/abs/2311.14803

A192. G. Carullo, R. Cotesta, E. Berti, V. Cardoso, *Reply to Comment on "Analysis of Ringdown Overtones in GW150914"*, Phys. Rev. Lett. 131, 169002 (2023).
https://arxiv.org/abs/2310.20625

A191. M. H.-Y. Cheung, E. Berti, V. Baibhav, R. Cotesta, *Extracting linear and nonlinear quasinormal modes from black hole merger simulations*, Phys. Rev. D **109**, 044069 (2024).
https://arxiv.org/abs/2310.04489

A190. J. Redondo-Yuste, G. Carullo, J. L. Ripley, E. Berti, V. Cardoso, *Spin dependence of black hole ringdown nonlinearities*, Phys. Rev. D Letters **109**, L101503 (2023).
https://arxiv.org/abs/2308.14796

A189. A. Santini, D. Gerosa, R. Cotesta, E. Berti, *Black-hole mergers in disk-like environments could explain the observed q–$\chi_{\rm eff}$ correlation*, Phys. Rev. D **108**, 083033 (2023).
https://arxiv.org/abs/2308.12998
This paper was featured in Astrobites.

A188. I. Gupta *et al.*, *Characterizing gravitational wave detector networks: From A$^\#$ to Cosmic Explorer*,
https://arxiv.org/abs/2307.10421

A187. M. Çalışkan, N. Anil Kumar, L. Ji, J. M. Ezquiaga, R. Cotesta, E. Berti, M. Kamionkowski, *Probing wave-optics effects and dark-matter subhalos with lensing of gravitational waves from massive black holes*, Phys. Rev. D **108**, 123543 (2023). https://arxiv.org/abs/2307.06990

A186. K. K. Y. Ng, K. Kritos, A. Antonelli, R. Cotesta, E. Berti, *Single-event likelihood of star cluster properties with LIGO-Virgo-Kagra binary black hole observations*, Phys. Rev. D **108**, 083015 (2023).
https://arxiv.org/abs/2307.03227

A185. L. Reali, A. Maselli, E. Berti, *The impact of compact binary confusion noise on tests of fundamental physics with next-generation gravitational-wave detectors*,
https://arxiv.org/abs/2307.01264

A184. A. Antonelli, K. Kritos, K. K. Y. Ng, R. Cotesta, E. Berti, *Classifying the generation and formation channels of individual LIGO-Virgo-KAGRA observations from dynamically formed binaries*,
Phys. Rev. D **108**, 084044 (2023). https://arxiv.org/abs/2306.11088

A183. P. Heidmann, N. Speeney, E. Berti, I. Bah, *Cavity effect in the quasinormal mode spectrum of topological stars*, Phys. Rev. D **108**, 024021 (2023). https://arxiv.org/abs/2305.14412

A182. D. Traykova, R. Vicente, K. Clough, T. Helfer, E. Berti, P. G. Ferreira, L. Hui, *Relativistic drag forces on black holes from scalar dark matter clouds of all sizes*,
Phys. Rev. D Letters **108**, L121502 (2023). https://arxiv.org/abs/2305.10492
This paper was selected as an Editor's Suggestion by Physical Review D Letters.

A181. B. Kleihaus, J. Kunz, T. Utermöhlen, E. Berti, *Quadrupole instability of static scalarized black holes*, Phys. Rev. D Letters **107**, L081501 (2023). https://arxiv.org/abs/2303.04107

A180. V. Strokov, G. Fragione, E. Berti, *LISA constraints on an intermediate-mass black hole in the Galactic centre*, Mon. Not. R. Astron. Soc. **524**, 2033 (2023).
https://arxiv.org/abs/2303.00015

A179. V. Baibhav, M. H.-Y. Cheung, E. Berti, V. Cardoso, G. Carullo, R. Cotesta, W. Del Pozzo, F. Duque, *Agnostic black hole spectroscopy: quasinormal mode content of numerical relativity waveforms and limits of validity of linear perturbation theory*, Phys. Rev. D **108**, 104020 (2023).
https://arxiv.org/abs/2302.03050

A178. F.-L. Julié, V. Baibhav, E. Berti, A. Buonanno, *Third post-Newtonian effective-one-body Hamiltonian in scalar-tensor and Einstein-scalar-Gauss-Bonnet gravity*, Phys. Rev. D **107**, 104044 (2023).
https://arxiv.org/abs/2212.13802

A177. K. Kritos, E. Berti, J. Silk, *Massive black hole assembly in nuclear star clusters*,
Phys. Rev. D **108**, 083012 (2023). https://arxiv.org/abs/2212.06845

A176. P. Heidmann, I. Bah, E. Berti, *Imaging topological solitons: the microstructure behind the shadow*, Phys. Rev. D **107**, 084042 (2023). https://arxiv.org/abs/2212.06837
This paper was selected as an Editor's Suggestion by Physical Review D, and featured in the news (e.g. in JHU Hub, Media INAF, The Independent, Gizmodo, New Scientist, VICE).
A175. D. Singh, A. Gupta, E. Berti, S. Reddy, B. Sathyaprakash, *Constraining properties of asymmetric dark matter candidates from gravitational-wave observations*, Phys. Rev. D **107**, 083037 (2023). https://arxiv.org/abs/2210.15739
A174. K. Kritos, V. Strokov, V. Baibhav, E. Berti, *Rapster: a fast code for dynamical formation of black-hole binaries in dense star clusters*, https://arxiv.org/abs/2210.10055
A173. L. Reali, A. Antonelli, R. Cotesta, S. Borhanian, M. Çalışkan, E. Berti, B. S. Sathyaprakash, *The impact of confusion noise on golden binary neutron-star events in next-generation terrestrial observatories*, https://arxiv.org/abs/2209.13452
A172. S. H. Völkel, N. Franchini, E. Barausse, E. Berti, *Constraining modifications of black hole perturbation potentials near the light ring with quasinormal modes*, Phys. Rev. D **106**, 124036 (2022). https://arxiv.org/abs/2209.10564
A171. V. Kapil, I. Mandel, E. Berti, B. Müller, *Calibration of neutron star natal kick velocities to isolated pulsar observations*, Mon. Not. R. Astron. Soc. **519**, 5893 (2023). https://arxiv.org/abs/2209.09252
A170. B. Zhou, L. Reali, E. Berti, M. Çalışkan, C. Creque-Sarbinowski, M. Kamionkowski, B. S. Sathyaprakash, *Subtracting compact binary foregrounds to search for subdominant gravitational-wave backgrounds in next-generation ground-based observatories*, Phys. Rev. D **108**, 064040 (2023). https://arxiv.org/abs/2209.01310
A169. B. Zhou, L. Reali, E. Berti, M. Çalışkan, C. Creque-Sarbinowski, M. Kamionkowski, B. S. Sathyaprakash, *Compact binary foreground subtraction in next-generation ground-based observatories*, https://arxiv.org/abs/2209.01221
A168. M. H.-Y. Cheung, V. Baibhav, E. Berti, V. Cardoso, G. Carullo, R. Cotesta, W. Del Pozzo, F. Duque, T. Helfer, E. Shukla, K. W. K. Wong, *Nonlinear effects in black hole ringdown*, Phys. Rev. Lett. 130, 081401 (2023). https://arxiv.org/abs/2208.07374
This paper was selected as an Editor's Suggestion by Physical Review Letters, and featured in a ViewPoint.
A167. M. Çalişkan, L. Ji, R. Cotesta, E. Berti, M. Kamionkowski, S. Marsat, *Observability of lensing of gravitational waves from massive black hole binaries with LISA*, Phys. Rev. D **107**, 043029 (2023). https://arxiv.org/abs/2206.02803
A166. G. Franciolini, K. Kritos, E. Berti, J. Silk, *Primordial black hole mergers from three-body interactions*, Phys. Rev. D **106**, 083529 (2022). https://arxiv.org/abs/2205.15340
A165. E. Berti, V. Cardoso, M. H.-Y. Cheung, F. Di Filippo, F. Duque, P. Martens, S. Mukohyama, *Stability of the fundamental quasinormal mode in time-domain observations against small perturbations*, Phys. Rev. D **106**, 084011 (2022). https://arxiv.org/abs/2205.08547
A164. N. Speeney, A. Antonelli, V. Baibhav, E. Berti, *The impact of relativistic corrections on the detectability of dark-matter spikes with gravitational waves*, Phys. Rev. D **106**, 044027 (2022). https://arxiv.org/abs/2204.12508
A163. K. K. Y. Ng, G. Franciolini, E. Berti, P. Pani, A. Riotto, S. Vitale, *Constraining high-redshift stellar-mass primordial black holes with next-generation ground-based gravitational-wave detectors*, Astrophys. J. Lett. 933, L41 (2022). https://arxiv.org/abs/2204.11864
A162. K. Clough, T. Helfer, H. Witek, E. Berti, *The problem with Proca: ghost instabilities in self-interacting vector fields*, Phys. Rev. Lett. 129, 151102 (2022). https://arxiv.org/abs/2204.10868

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