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Qualification Summary

- Associate professor in experimental physics of fundamental interactions (*Abilitazione Scientifica Nazionale 02/A1*), also habilitated for theoretical physics of fundamental interactions (*02/A2*).
- Expertise in gravitational wave, black hole, and neutron star physics, data/signal processing, general-relativistic-(magneto)hydrodynamics numerical simulations, and in solving numerically highly non-linear partial differential equations, in general.
- 177 peer-reviewed publications (2 single-author) and 14 preprints (see detailed list), 62705 citations by 18628 documents, h-index 84, g-index 191, (source: ADS-NASA, April 2023); 56 scientific talks, half of which on invitation (see detailed list), and several talks for the general public.
- Teaching experience at both undergraduate and graduate levels in the areas of General Relativity, Classical Physics, Astrophysics, Mathematics, and Computer Programming.
- Proficiency in high-performance and high-throughput computing on massively parallel computers and in analysing large amounts of research data.
- Extensive software development experience in multiple programming languages, within small and large collaborations and individually.
- Broad range experience collaborating with international scientific research teams.
- Italian mother tongue, English bilingual proficiency, and basic German.

Employment History

07/2021-present:	**Associate Professor**, Dipartimento di Fisica, Sapienza – Università di Roma
07/2018-06/2021:	**Assistant Professor**, Dipartimento di Fisica, Sapienza – Università di Roma **Rita Levi Montalcini fellow**
01/2017-06/2018:	**Research fellow**, Gravitational Physics Group, Cardiff University
11/2013-12/2016:	**Research associate**, Gravitational Physics Group, Cardiff University
11/2009-10/2013:	**Post-doctoral researcher**, Numerical Relativity Group, Albert-Einstein-Institut, Max-Planck-Institut für Gravitationsphysik

Roles and Responsibilities

2023-present:	Co-chair of the LIGO-Virgo-KAGRA Data Analysis Council.
2023-present:	Virgo data analysis coordinator.

2018-present:	Review Co-chair of the LIGO-Virgo Collaboration burst data analysis group.
2016-2022:	Co-chair of the LIGO-Virgo Collaboration gamma-ray burst follow-up data analysis working group.
2019-present:	Member of the Amaldi Research Center Steering Committee.

Education

11/2006-10/2009:	**Ph. D. in physics**, Sapienza – Università di Roma Thesis title: Compact Gravitational Wave Sources (available online) Supervisor: Prof. Valeria Ferrari
10/2004-09/2006:	**Master's degree in theoretical physics** (*Laurea specialistica in fisica teorica*), Sapienza – Università di Roma, full marks *cum laude* (110/110 e lode) Thesis title: *Emissione gravitazionale di sistemi binari formati da un buco nero di Schwarzschild e una stella* (Gravitational Radiation Emission from Star + Schwarzschild Black Hole Binary Systems) Supervisor: Prof. Valeria Ferrari
10/2001-09/2004:	**Bachelor's degree in physics**, (*Laurea in fisica*) Sapienza – Università di Roma, full marks *cum laude* (110/110 e lode) Dissertation title: *Onde gravitazionali emesse da buchi neri perturbati* (Gravitational Waves Emitted by Perturbed Black Holes) Supervisor: Prof. Valeria Ferrari

Further Schooling and Formation

2016:	Cardiff University Fast Track to Fellowships Program
2014-18:	Cardiff University Research Staff Career Development Skills Courses (Introduction to Research Funding, Managing People in Research, Delivering Lectures, Supervising Research Students); Equality & Diversity Training; Information Security Training; Open Access Training
May 2007:	2nd VESF School On Gravitational Waves (Cascina, PI, Italy)
Aug.-Sep. 2005:	Summer Student at Fermi National Accelerator Laboratory (IL, USA) in the CDF-Rome group [supervisor: Prof. A. Messina (andrea.messina@uniroma1.it)]

Awards and Grants

2022: Co-PI for the PNRR (Recovery and Resilience Plan) project "Ricerche di Fisica nello Spoke 2 del CN1 - HPC" (Physics Research in the Spoke 2 of the National Center 1 - High Performance Computing) [273,450 €, from the Ministry of Research]

2021: Sapienza Large Facilities Grant, as participant in the "Multi-purpose millimetre-and-submillimiter-wave testing facility (Vector Network Analyser) for accurate characterisation of quasi-optical and waveguide components/systems in the frequency range 75-500 GHz" project [520,000 €]

2020: 9,000 € for the incoming visiting researcher Dr. Tito Dal Canton (*Professori Visitatori per la Ricerca*)

09/2018: Best poster award at the *LIGO-Virgo Collaboration meeting*, Maastricht, Netherlands

2017: Awarded a Rita Levi Montalcini Fellowship [197,973.66 €]

2017-18: 9,400 £ from the Cardiff Incoming Visiting Fellowship Scheme & International Collaboration Seedcorn Fund for the collaboration "Multimessenger Astronomy with Neutron Star-Black Hole Mergers" with the Princeton and Parma Universities

2017: Physics World 2017 Breakthrough of the Year Award

2017: Albert Einstein Medal

2017: Princess of Asturias Award for Technical and Scientific Research

2017: Royal Astronomical Society Group Achievement Award for Astronomy

2017: Successfully defended a 12-Mhr PRACE allocation request for the multi-year project access *Modeling gravitational-wave signals from black-hole binaries* (17/03/2017)

2016: Gruber Cosmology Prize

2016: Special Breakthrough Prize in Fundamental Physics

2016: Vice Chancellor's Award for Outstanding Contribution to the University, as part of the Cardiff University Gravitational Physics Group

2016: 10,000 € by ECT* and ENSAR2 to organize an ECT* workshop ["Nuclear Astrophysics in the Gravitational Wave Era" https://www.ectstar.eu/workshops/nuclear-astrophysics-in-the-gravitational-wave-astronomy-era/]

2016: 300 £ of travel funds (Cardiff University)

2016: Selected for Cardiff University's Fast Track to Fellowships program.

2012: 10000 € from the German Research Foundation (DFG) for the project *Improving Advanced LIGO/Virgo event rate estimates for compact binary mergers* [173–175, 182, 184, 185].

2006: Teaching assistance fellowship for the period 2006-2009, Sapienza – Università di Roma

2006: Ph. D. position and fellowship at the Physics Department of the Sapienza – Università di Roma (XXII Ph. D. round, starting 11/2006; 10 fellowships, about 100 candidates)

2005: U. S. Department of Energy summer student fellowship to perform research at Fermilab

2002-05: 3 collaboration fellowships at the Sapienza – Università di Roma Physics Department

Memberships

2018-present:	INFN associate
2018-present:	Virgo Collaboration
2018-present:	GRAWITA Collaboration
2013-2018:	LIGO Scientific Collaboration
2006-2009:	INFN associate

Teaching

2022-23: *Gravitational Waves, Compact Stars and Black Holes*, Department of Physics, Sapienza - Università di Roma (a 60hr course for master students, teaching 30 hours).

2021-23: *Computing Methods for Physics*, Department of Physics, Sapienza - Università di Roma (a 60hr course for master students).

2022-23: *Elettromagnetismo*, Department of Mathematics, Sapienza - Università di Roma (an 84hr course for third year students, teaching 52 hours).

2021-22: *Elettromagnetismo*, Department of Mathematics, Sapienza - Università di Roma (a 90hr course for third year students).

2018-21: *Gravitational-Wave Astronomy*, Department of Physics, Sapienza - Università di Roma (a 10hr course for second and third year honours degree students).

2018-21: *Fisica Applicata*, Department of Medicine, Sapienza - Università di Roma (a 12hr course for first year Nursing and Midwifery Sciences students).

2018-21: *Fisica*, Department of Computer Science, Sapienza - Università di Roma (a 60hr course for third year students).

June 2016: *Gravitational Waves from Conception to Detection*, **invited opening lecture** for the 2nd International Doctorate Network in Particle Physics, Astrophysics and Cosmology (IDPASC) Students Workshop, Universidade do Porto (Portugal) [www.idpasc.lip.pt/LIP/events/2016_workshop_students_feup/index.php].

2015-16: *Advanced General Relativity and Gravitational Waves* module organizer, Cardiff University (a course for third and fourth year students).

Nov. 2015: *Gravitational Waves from Compact Binary Coalescences* lecture for project students, Cardiff University.

June 2012: *Neutron Star (Astro)Physics and Compact Binary Mergers* lectures, International Max Planck Research School in Gravitational Waves.

2006-09: Teaching assistant for *Laboratorio di Calcolo* (Computer Programming Lab) and *Metodi e Modelli Matematici per la Fisica* (Mathematical Methods and Models for Physics) classes, part of the B.Sc. physics curriculum at Sapienza – Università di Roma (contact: Prof. Riccardo Faccini, riccardo.faccini@uniroma1.it)

Student Supervision

2023: supervision of 2 PhD students, 1 MSc student 2 BSc students and 2 BSc Mathematics students of the Sapienza – University of Rome; supervision of 1 project student; co-supervision of 2 MSc student

2022: supervision of 2 MSc students and 1 BSc student; co-supervision of 1 PhD and 1 MSc student

2021: supervision of 1 project student and 2 BSc students

2020: Supervised 3 MSc Physics students of the Sapienza – University of Rome, one of whom was awarded the 2020 con.Scienze prize for best MSc thesis in Italy in mathematics, physics, and natural sciences.

2020: Co-supervised 2 MSc Physics students of the University of Naples Federico II

2020: Supervised 2 BSc Physics students of the Sapienza – University of Rome

2019: Supervised an MSc Physics student of the Sapienza – University of Rome

2019: Supervised 2 BSc Computer Science students of the Sapienza – University of Rome

2019:	Co-supervised a BSc Physics student of the Sapienza – University of Rome
2017:	Mentored two Cardiff University MSc students on assessing the measurability of precession in binary black hole coalescences with gravitational-wave Bayesian inference.
2016-2018:	Mentored Friedrich-Schiller-Universität Jena PhD student on assessing the response of gravitational-wave Bayesian inference to binary neutron star mergers.
2016:	Mentored Cambridge University summer student on constraining the polarization content of gravitational-wave data from coalescing binary black holes.
2015:	Mentored University of Trento summer student on the research for his BSc thesis "Joint Electromagnetic and Gravitational-Wave Observations of Neutron Star-Black Hole Mergers" which I coadvised (28/09/2015, 110/110).
2014:	Mentored University of Glasgow summer student on Bayesian inference analysis of coalescing binary black hole gravitational-wave data, West Virginia University summer student (funded by NSF's Partnerships for International Research and Education) on modelling neutron star–black hole disruptive mergers, and Cardiff University summer student on coherent gravitational-wave targetted searches.

Outreach

06/04/2021:	Lecture for high school students on compact binary coalescences and gravitational waves (as part of the *Percorso per le Competenze Trasversali e per l'Orientamento (PCTO)* project *Costruisci la tua onda gravitazionale!*)
10/04/2021:	*Onde Gravitazionali*, a 2-hour livestream question-and-answer event held by the Casa Sardegna association, that I attended as an expert along with Prof.A.Marcianò (Fudan University Shanghai)
13/06/2018:	*From Einstein to a New Science*, **invited talk** at the Cardiff University Business School research away day, Cardiff
11/05/2018:	*Chirp and Twinkle Little Stars*, a stand-up talk on my research activity for the general public, Chapter Arts Centre, Cardiff
20/20/2017:	*Chirp and Twinkle Little Stars*, opening talk at the "Gravitational Celebrations" events, Cardiff University [>250 person attendance; https://www.eventbrite.co.uk/e/gravitational-celebrations-tickets-38764563854]
16/10/17:	Member of expert panel of six at the press conference for the announcement of GW170817, Royal Society of London, moderator The Lord Rees of Ludlow Martin Rees.
14/10/2016:	*The First Sounds of the Cosmic Symphony*, a stand-up talk on my research activity for the general public, Chapter Arts Centre, Cardiff
09/09/2016:	*Gravitational Waves: Nature's Biggest Explosions*, Cardiff University Open Day
01/06/2016:	*Ascoltare le voci dell'Universo* (*Listening the voices of the Universe*), a **two-hour invited outreach talk** on gravitational waves and their first detection given at the liceo scientifico statale Nomentano (Nomentano high school), Rome, Italy
02/2016:	Contributed to Black Hole Hunter (www.blackholehunter.org), an interactive online game on gravitational-wave detection
2014-18:	Volunteer at the gravitational physics stand of the "Star Attractions at the Museum" at National Museum Cardiff [event dates: 10/01/2014, 28/01/2017]
2013-18:	Volunteer at Cardiff University School of Physics and Astronomy open days for prospective students

Service Activities

Regular referee:	Physical Review Letters, Physical Review D, Classical and Quantum Gravity, Journal of Physics G: Nuclear and Particle Physics, Astroparticle Physics, The Astrophysical Journal Letters, The Astrophysical Journal
Regular reviewer:	U.S. National Science Foundation (NSF) Astronomy and Astrophysics Research Grants (AAG), Netherlands Organisation for Scientific Research (NWO), *Fondo Italiano per la Scienza* (FIS, a funding scheme of in fundamental science of the Italian Ministry of University and Research)
2023:	Evaluation committee member for a 3-year post-doc position at the Università di Roma Tor Vergata
	Scientific Organizing Committee member for the Fourth Gravi-Gamma Workshop
	PhD thesis referee, University of Zürich, Switzerland, May 4
	PhD thesis defence committee member, Université Savoie Mont Blanc, France, March 17
2022:	Scientific Organizing Committee member for the Third Gravi-Gamma Workshop
	Organizing committee member of the Amaldi Research Center Summer School https://agenda.infn.it/event/28968/
	Evaluation committee member for 58 tutoring position at the Università di Roma Sapienza
	Evaluation committee member for 11 fellowships supporting MSc research activities abroad, at the Università di Roma Sapienza
2021:	PhD thesis defence committee member, Université Paris-Saclay, France, October 4
	Evaluation committee member for 13 fellowships supporting MSc research activities abroad, at the Università di Roma Sapienza
2021-present:	Early career scientist mentor for the Virgo Early Career Scientists group
2019-present:	Steering committee member of the Amaldi Research Center (www.phys.uniroma1.it/fisica/arc_amaldi_research_center)
2018-present:	Member of multiple BSc and MSc degree committees, Physics Department, Sapienza – University of Rome
2018:	EWASS 2018 session organizer (SS18, "Multi-messenger Astronomy with Gravitational Waves")
2017:	Principal organizer of the ECT* workshop "Nuclear Astrophysics in the Gravitational Wave Era"[1]
2017-18:	Astronomy Seminars organizer for Cardiff University
2016-18:	Speaker at Science and Social Sciences careers events organized by the University Graduate College at Cardiff University
2014-15:	Gravitational Physics Seminars organizer for Cardiff University
2012-13:	SVN administrator at the Albert-Einstein-Institute
2012-13:	Astrophysical Relativity Journal Club organizer at the Albert-Einstein-Institute

[1] https://www.ectstar.eu/workshops/nuclear-astrophysics-in-the-gravitational-wave-astronomy-era/.

2010-13:	Designer and maintainer of the AEI Numerical Relativity Group website
2004-05:	Physics Department computer lab supervisor, Sapienza – Università di Roma (contact: Prof. Giovanni Organtini, giovanni.organtini@uniroma1.it)
2002-04:	Set up experiments for the history of physics classes, Sapienza – Università di Roma Physics Department (contact was Prof. Maria Grazia Ianniello)

Publications

[1] R. Abbott, et al., *Search for gravitational-lensing signatures in the full third observing run of the LIGO-Virgo network*, arXiv:2304.08393 (2023).

[2] R. Abbott, et al., *Open data from the third observing run of LIGO, Virgo, KAGRA and GEO*, arXiv:2302.03676 (2023).

[3] F. Acernese, et al., *Advanced Virgo Plus: Future Perspectives*, J. Phys. Conf. Ser. **2429**, 012040 (2023).

[4] F. Acernese, et al., *The Advanced Virgo+ status*, J. Phys. Conf. Ser. **2429**, 012039 (2023).

[5] Giulia Gianfagna, Luigi Piro, Francesco Pannarale, Hendrik Van Eerten, Fulvio Ricci et al., *Joint analysis of gravitational-wave and electromagnetic data of mergers: breaking an afterglow model degeneracy in GW170817 and in future events*, arXiv:2212.01104 (2022).

[6] R. Abbott, et al., *Search for subsolar-mass black hole binaries in the second part of Advanced LIGO's and Advanced Virgo's third observing run*, arXiv:2212.01477 (2022).

[7] R. Abbott, et al., *Search for gravitational-wave transients associated with magnetar bursts in Advanced LIGO and Advanced Virgo data from the third observing run*, arXiv:2210.10931 (2022).

[8] F. Acernese, et al., *Virgo Detector Characterization and Data Quality: tools*, arXiv:2210.15634 (2022).

[9] F. Acernese, et al., *Virgo Detector Characterization and Data Quality: results from the O3 run*, arXiv:2210.15633 (2022).

[10] R. Abbott, et al., *Search for continuous gravitational wave emission from the Milky Way center in O3 LIGO-Virgo data*, Phys. Rev. D **106**, 042003 (2022).

[11] G. Stratta, F. Pannarale, *Neutron Star Binary Mergers: The Legacy of GW170817 and Future Prospects*, Universe **8**, 459 (2022).

[12] R. Abbott, et al., *Model-based cross-correlation search for gravitational waves from the low-mass X-ray binary Scorpius X-1 in LIGO O3 data*, arXiv:2209.02863 (2022).

[13] M. Emma, F. Schianchi, F. Pannarale, V. Sagun, T. Dietrich, *Numerical Simulations of Dark Matter Admixed Neutron Star Binaries*, Particles **5**, 273 (2022).

[14] F. Acernese, et al., *Virgo Detector Characterization and Data Quality during the O3 run*, arXiv:2205.01555 (2022).

[15] R. Abbott, et al., *First Joint Observation by the Underground Gravitational-Wave Detector, KAGRA, with GEO600*, Progress of Theoretical and Experimental Physics **2022**, 063F01 (2022).

[16] R. Abbott, et al., *Search for Gravitational Waves Associated with Gamma-Ray Bursts Detected by Fermi and Swift During the LIGO-Virgo Run O3b*, Astrophys. J. **928**, 186 (2022).

[17] R. Abbott, et al., *Search for Gravitational Waves Associated with Fast Radio Bursts Detected by CHIME/FRB During the LIGO–Virgo Observing Run O3a*, arXiv:2203.12038 (2022).

[18] F. Acernese, et al., *The Virgo O3 Run and the Impact of the Environment*, Class. Quant. Grav **39**, 235009 (2022).

[19] R. Abbott, et al., *Constraints on Dark Photon Dark Matter Using Data from LIGO's and Virgo's Third Observing Run*, Phys. Rev. D **105**, 063030 (2022).

[20] R. Abbott, et al., *Search for Intermediate-Mass Black Hole Binaries in the Third Observing Run of Advanced LIGO and Advanced Virgo*, Astronomy & Astrophysics **659**, A84 (2022).

[21] F. Acernese, et al., *Calibration of Advanced Virgo and Reconstruction of the Detector Strain $h(t)$ During the Observing Run O3*, Class. Quant. Grav. **39**, 045006 (2022).

[22] R. Abbott, et al., *Search for Gravitational Waves from Scorpius X-1 with a Hidden Markov model in O3 LIGO data*, Phys. Rev. D **106**, 062002 (2022).

[23] R. Abbott, et al., *All-sky Search for Continuous Gravitational Waves from Isolated Neutron Stars Using Advanced LIGO and Advanced Virgo O3 data*, Phys. Rev. D **106**, 102008 (2022).

[24] R. Abbott, et al., *Narrowband Searches for Continuous and Long-Duration Transient Gravitational Waves from Known Pulsars in the LIGO-Virgo Third Observing Run*, Astrophys. J. **932**, 133 (2022).

[25] R. Abbott, et al., *Tests of General Relativity with GWTC-3*, arXiv:2112.06861 (2021).

[26] E. Hamilton, et al., *Model of Gravitational Waves from Precessing Black-Hole Binaries Through Merger and Ringdown*, Phys. Rev. D **104**, 124027 (2021).

[27] R. Abbott, et al., *All-sky Search for Short Gravitational-Wave Bursts in the Third Advanced LIGO and Advanced Virgo Run*, Phys. Rev. D **104**, 122004 (2021).

[28] R. Abbott, et al., *Search for Lensing Signatures in the Gravitational-Wave Observations from the First Half of LIGO-Virgo's Third Observing Run*, Astrophys. J. **923**, 14 (2021).

[29] R. Abbott, et al., *All-sky Search for Gravitational Wave Emission from Scalar Boson Clouds Around Spinning Black Holes in LIGO O3 Data*, Phys. Rev. D **105**, 102001 (2022).

[30] R. Abbott, et al., *Search of the Early O3 LIGO Data for Continuous Gravitational Waves from the Cassiopeia A and Vela Jr. Supernova Remnants*, Phys. Rev. D **105**, 082005 (2022).

[31] R. Abbott, et al., *Searches for Gravitational Waves from Known Pulsars at Two Harmonics in the Second and Third LIGO-Virgo Observing Runs*, Astrophys. J. **935**, 1 (2022).

[32] R. Abbott, et al., *The Population of Merging Compact Binaries Inferred Using Gravitational Waves Through GWTC-3*, Phys. Rev. X **13**, 011048 (2023).

[33] R. Abbott, et al., *Constraints on the Cosmic Expansion History from GWTC-3*, arXiv:2111.03604 (2021).

[34] R. Abbott, et al., *GWTC-3: Compact Binary Coalescences Observed by LIGO and Virgo During the Second Part of the Third Observing Run*, arXiv:2111.03606 (2021).

[35] R. Abbott, et al., *All-sky Search for Long-Duration Gravitational-Wave Bursts in the Third Advanced LIGO and Advanced Virgo run*, Phys. Rev. D **104**, 102001 (2021).

[36] R. Abbott, et al., *Constraints from LIGO O3 Data on Gravitational-wave Emission Due to r-modes in the Glitching Pulsar PSR J0537-6910*, Astrophys. J .**922**, 71A (2021).

[37] R. Abbott, et al., *Searches for Continuous Gravitational Waves from Young Supernova Remnants in the Early Third Observing Run of Advanced LIGO and Virgo*, Astrophys. J. **921**, 80 (2021).

[38] R. Abbott, et al., *All-sky, All-frequency Directional Search for Persistent Gravitational-Waves from Advanced LIGO's and Advanced Virgo's First Three Observing Runs*, Phys. Rev. D **105**, 122001 (2022).

[39] R. Abbott, et al., *All-sky search for Continuous Gravitational Waves from Isolated Neutron Stars in the Early O3 LIGO Data*, Phys. Rev. D **104** h2004A (2021).

[40] R. Abbott, et al., *Search for Subsolar-Mass Binaries in the First Half of Advanced LIGO and Virgo's Third Observing Run*, Phys. Rev. Lett. **129**, 061104 (2022).

[41] R. Abbott, et al., *Search for Continuous Gravitational Waves from 20 Accreting Millisecond X-ray Pulsars in O3 LIGO data*, Phys. Rev. D **105**, 02200 (2022).

[42] R. Abbott, et al., *GWTC-2.1: Deep Extended Catalog of Compact Binary Coalescences Observed by LIGO and Virgo During the First Half of the Third Observing Run*, arXiv:2108.01045 (2021).

[43] R. Abbott, et al., *Search for Anisotropic Gravitational-Wave Backgrounds Using Data from Advanced LIGO and Advanced Virgo's First Three Observing Runs*, Phys. Rev. D **104**, 022005 (2021).

[44] R. Abbott, et al., *Upper Limits on the Isotropic Gravitational-Wave Background from Advanced LIGO's and Advanced Virgo's Third Observing Run*, Phys. Rev. D **104**, 022004 (2021).

[45] D. Davis, et al., *LIGO Detector Characterization in the Second and Third Observing Runs*, Class. Quant. Grav. **38**, 135014 (2021).

[46] R. Abbott, et al., *Observation of Gravitational Waves from Two Neutron Star-Black Hole Coalescences*, Astrophys. J. Lett. **915**, L5 (2021).

[47] R. Abbott, et al., *Search for Gravitational Waves Associated with Gamma-Ray Bursts Detected by Fermi and Swift During the LIGO-Virgo Run O3a*, Astrophys. J. **915**, 86 (2021).

[48] R. Abbott, et al., *Constraints on cosmic strings using data from the third Advanced LIGO-Virgo observing run*, Phys. Rev. Lett. **126**, 241102 (2021).

[49] R. Green, C. Hoy, S. Fairhurst, M. Hannam, F. Pannarale, C. Thomas, *Identifying when Precession can be Measured in Gravitational Waveforms*, Phys. Rev. D **103**, 124023 (2021).

[50] R. Abbott, et al., *Tests of General Relativity with Binary Black Holes from the second LIGO-Virgo Gravitational-Wave Transient Catalog*, Phys. Rev. D **103**, 122002 (2021).

[51] R. Abbott, et al., *Diving Below the Spin-Down Limit: Constraints on Gravitational Waves from the Energetic Young Pulsar PSR J0537-6910*, Astrophys. J. Lett. **913**, L27 (2021).

[52] R. Ciancarella, F. Pannarale, A. Addazi, A. Marciano, *Constraining Mirror Dark Matter Inside Neutron Stars*, Physics of the Dark Universe **32**, 100796 (2021).

[53] R. Abbott, et al., *Population Properties of Compact Objects from the Second LIGO-Virgo Gravitational-Wave Transient Catalog*, Astrophys. J. Lett. **913**, L7 (2021).

[54] R. Abbott, et al., *GWTC-2: Compact Binary Coalescences Observed by LIGO and Virgo During the First Half of the Third Observing Run*, Phys. Rev. X **11**, 021053 (2021).

[55] R. Abbott, et al., *All-sky Search in Early O3 LIGO Data for Continuous Gravitational-Wave Signals from Unknown Neutron Stars in Binary Systems*, Phys. Rev. D **103**, 064017 (2021).

[56] B.P. Abbott, et al., *A Gravitational-Wave Measurement of the Hubble Constant Following the Second Observing Run of Advanced LIGO and Virgo*, Astrophys. J. **909**, 218 (2021). [Erratum: Astrophys. J. **923**, 279 (2021).]

[57] R. Abbott, et al., *Open Data from the First and Second Observing Runs of Advanced LIGO and Advanced Virgo*, SoftwareX **13**, 100658 (2021).

[58] R. Abbott, et al., *Gravitational-wave Constraints on the Equatorial Ellipticity of Millisecond Pulsars*, Astrophys. J. Lett. **902**, L21 (2020).

[59] F. Acernese, et al., *Quantum Backaction on Kg-Scale Mirrors: Observation of Radiation Pressure Noise in the Advanced Virgo Detector*, Phys. Rev. Lett. **125**, 131101 (2020).

[60] B.P. Abbott, et al., *Prospects for observing and localizing gravitational-wave transients with Advanced LIGO, Advanced Virgo and KAGRA*, Living Reviews in Relativity **23**, 3 (2020).

[61] R. Abbott, et al., *Properties and Astrophysical Implications of the 150 $M_\odot$ Binary Black Hole Merger GW190521*, Astrophys. J. Lett. **900**, L13 (2020).

[62] R. Abbott, et al., *GW190521: A Binary Black Hole Merger with a Total Mass of 150 $M_\odot$*, Phys. Rev. Lett. **125**, 101102 (2020).

[63] R. Abbott, et al., *GW190412: Observation of a Binary-Black-Hole Coalescence with Asymmetric Masses*, Phys. Rev. D 102, 043015 (2020).

[64] J.E. Thompson, E. Fauchon-Jones, S. Khan, E. Nitoglia, F. Pannarale, T. Dietrich, M. Hannam, *Modeling the Gravitational Wave Signature of Neutron Star Black Hole Coalescences*, Phys. Rev. D **101**, 124059 (2020).

[65] R. Abbott, et al., *GW190814: Gravitational Waves from the Coalescence of a 23 Solar Mass Black Hole with a 2.6 Solar Mass Compact Object*, Astrophys. J. Lett. **896**, L44 (2020).

[66] D. Chatterjee, S. Ghosh, P.R. Brady, S.J. Kapadia, A.L. Miller, S. Nissanke, F. Pannarale, *A Machine Learning Based Source Property Inference for Compact Binary Mergers*, Astrophys. J. **896**, 54 (2020).

[67] B.P. Abbott, et al., *Optically Targeted Search for Gravitational Waves Emitted by Core-Collapse Supernovae During the First and Second Observing Runs of Advanced LIGO and Advanced Virgo*, Phys. Rev. D **101**, 084002 (2020).

[68] R. Hamburg, et al., *A Joint Fermi-GBM and LIGO/Virgo Analysis of Compact Binary Mergers from the First and Second Gravitational-wave Observing Runs*, Astrophys. J. **893**, 100 (2020).

[69] B.P. Abbott, et al., *A guide to LIGO-Virgo detector noise and extraction of transient gravitational-wave signals*, Class. Quant. Grav. **37**, 055002 (2020).

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Scientific Talks

2022

56. *Gravitational-Wave and Gamma-Ray Burst Joint Observations*, RICAP-22 Roma International Conference on Astroparticle Physics [07/09/2022]

2021

55. **Invited (remote) parallel talk** *The robustness of the association of GW170817 and GRB 170817A*, 16th Marcel Grossmann Meeting, [05/07/2021]

54. *Gravitational-Wave Observations of Compact Binary Coalescences*, Sapienza – Università di Roma, Rome, Italy [12/04/2021]

2020

53. **Invited (remote) seminar** *Searching for Gravitational Waves Associated with Gamma-Ray Bursts*, NIKHEF, Amsterdam, The Netherlands [20/11/2020]

52. **Invited (remote) seminar** *Overview of the Burst Review Process*, KAGRA Collaboration, [30/07/2020]

2019

51. **Invited plenary talk** *Astrophysics with Gravitational-Wave Observations of Compact Binaries*, XI Congresso Nazionale Oggetti Compatti, Osservatorio di Arcetri, Firenze, Italy [21/11/2019]

50. **Invited plenary talk** *Astrophysics with Gravitational Waves Observations of Compact Binaries*, 19^{th} Lomonosov Conference on Elementary Particle Physics, Moscow State University, Moscow, Russia [22/08/2019]

49. **Invited plenary talk** *Gravitational Waves from Coalescing Neutron Star Binaries*, 9^{th} Iberian Gravitational-Wave Meeting, Santiago de Compostela, Spain [04/06/2019]

48. **Invited colloquium** *Astrophysical Expectations from O3*, Università di Napoli Federico II, Naples, Italy [28/03/2019]

47. **Invited plenary talk** *Gravitational Waves and Multi-messenger Astronomy*, XVIII International Workshop on Neutrino Telescopes, Venice, Italy [20/03/2019]

2018

46. **Invited plenary talk** *The First Binary Neutron Star Coalescence*, Neutron Stars in Lisbon: The Multimessenger Universe After GW170817, Instituto Superior Técnico, Lisbon, Portugal [12/04/2018]

2017

45. **Invited seminar** *Rattle and Shine: Compact Binary Coalescences in the Gravitational-Wave Astronomy Era*, Sapienza – Università di Roma, Rome, Italy [31/10/2017]

44. **Invited colloquium** *Rattle and Shine: Compact Binary Coalescences in the Gravitational-Wave Astronomy Era*, SISSA, Trieste, Italy [26/10/2017]

43. **Invited seminar** *Searching for Gravitational Waves Associated with Gamma-Ray Bursts in the Advanced Detector Era*, University of Washington, Bothel (WA) USA [08/08/2017]

42. **Invited seminar** *Frequency Domain Binary Black Hole Gravitational Waveforms with Higher Multipoles*, University of Oregon, Eugene (OR) USA [02/08/2017]

41. *Search for Gravitational Waves Associated with Gamma-Ray Bursts During the First Advanced LIGO Observing Run*, 12^{th} Amaldi Meeting, Pasedena (CA) USA [11/07/2017]

40. *Frequency Domain Binary Black Hole Gravitational Waveforms with Higher Multipoles*, 12^{th} Amaldi Meeting, Pasedena (CA) USA [10/07/2017]

39. *Searching for Gravitational Waves Associated with Gamma-Ray Bursts in the Advanced Detector Era*, National Astronomy Meeting, Hull, UK [03/07/2017]

38. **Invited plenary talk**, *Searches for Gravitational Waves Associated with Gamma-Ray Bursts in the Advanced Detector Era*, NewCompStar Annual Meeting, Warsaw, Poland [29/03/2017]

37. **Invited talk**, *Searching for Gravitational Waves Associated with Gamma-Ray Bursts in the Advanced Detector Era*, CEA, Saclay, France [21/02/2017]

36. **Invited talk**, *Searching for Gravitational Waves Associated with Gamma-Ray Bursts in the Advanced Detector Era*, Institut d'Astrophysique de Paris, Paris, France [20/02/2017]

2016

35. **Invited review talk and chair of round table discussion**, *Simulating Spacetimes with Matter*, Physics of the Extreme Workshop, PennState University, State College, PA, USA.

34. **Invited talk**, *Neutron star gravitational-wave transient searches*, NewCompStar meeting on oscillations and instabilities in neutron stars, University of Southampton, Southampton, UK [13/09/2016]

33. **Invited opening lecture**, *Gravitational Waves from Conception to Detection*, 2nd International Doctorate Network in Particle Physics, Astrophysics and Cosmology (IDPASC) Students Workshop, Universidade do Porto, Porto, Portugal [22/06/2016]

32. **Invited plenary talk**, *Observing Gravitational Waves from Short Gamma-Ray Bursts*, JINA-CEE International Symposium on Neutron Stars in the Multi-Messenger Era: Prospects & Challenges, Ohio University, Athens (OH), USA [26/05/2016]

31. **Invited seminar**, *Observation of gravitational waves from a binary black hole merger*, University of Trento, Trento, Italy [06/04/2016]

30. **Invited seminar**, *Observation of gravitational waves from a binary black hole merger*, Caltech, Pasadena (CA), USA [17/03/2016]

29. **Invited colloquium**, *Observing gravitational waves from binary black hole mergers*, Portsmouth University, Portsmouth, UK [04/03/2016]

2015

28. **Invited seminar**, *Searching for Coalescing Neutron Star Binaries in the Advanced Gravitational Wave Detector Era*, University of Southampton, Southampton, UK [23/04/2015]

27. **Invited seminar**, *Prospects for Joint Gravitational Wave and Electromagnetic Observations of Neutron-Star–Black-Hole Coalescing Coalescing Binaries*, University of Glasgow, Glasgow, UK [01/04/2015]

2014

26. *Joint Gravitational Wave and Electromagnetic Observations of Neutron-Star–Black-Hole Coalescing Coalescing Binaries*, Coalescing Binary Neutron Stars as Fundamental Physics Laboratory, INT, University of Washington, Seattle, USA [22/07/2014]

25. *Prospects for Joint Gravitational Wave and Electromagnetic Observations of Neutron-Star–Black-Hole Coalescing Coalescing Binaries*, National Astronomy Meeting, Portsmouth, UK [26/06/2014]

24. *Prospects for Joint Gravitational Wave and Electromagnetic Observations of Neutron-Star–Black-Hole Coalescing Coalescing Binaries*, Gamma-Ray Bursts in the Multi-Messenger Era, Paris, France [19/06/2014]

23. *Neutron-Star–Black-Hole Coalescing Binaries: Prospects for Joint Gravitational Wave and Electromagnetic Observations*, Gravitational Waves and Gamma Ray Bursts, Chicheley, UK [16/06/2014]

22. *Neutron-Star-Black-Hole Mergers: Prospects for Short Gamma-Ray Burst Counterparts*, *Problemi Attuali in Fisica Teorica* conference, Vietri Sul Mare (SA), Italy [14/04/2014]

2013

21. *From Neutron Star Structure to Compact Binary Mergers and Back*, Cardiff University, Cardiff, UK [13/12/2013]

20. **Invited seminar**, *Coalescing Compact Binaries: Final State, Gravitational Wave Emission, and Afterglow*, Caltech, Pasadena (CA), USA [11/07/2013]

2012

19. *The Black Hole Remnant of Black Hole - Neutron Star Coalescing Binaries*, *V Black Holes Workshop*, Instituto Superior Técnico, Lisbon, Portugal [17/12/2012]

18. **Invited seminar**, *Modelling the Remnant of Black Hole-Neutron Star Mergers*, Cardiff University, Cardiff, UK [21/11/2012]

17. **Invited seminar**, *Modelling the Remnant and the Afterglow of Compact Binary Mergers*, Copernicus Center, Warsaw, Poland [14/11/2012]

16. **Invited seminar**, *Gravitational Wave Physics and Astronomy: Present Status and the Years to Come*, Astronomical Observatory University of Warsaw, Warsaw, Poland [13/11/2012]

15. *The Black Hole Remnant and the Afterglow of Compact Binary Mergers*, *Gravitational-Wave Physics & Astronomy Workshop*, Hannover, Germany [07/06/2012]

14. *Coalescing Compact Binaries: Final Spin, Afterglow, and Equation of State*, *Problemi Attuali in Fisica Teorica* conference, Vietri Sul Mare (SA), Italy [04/04/2012]

2011

13. *The Nuclear Equation of State and Compact Binary Inspirals*, Mode-SNR-PWN Workshop, Station de Radioastronomie de Nançay, Nançay, France [22/11/2011]

12. *Coalescing Mixed Binaries*, Internal Seminars at AEI, AEI, Golm, Germany [28/09/2011]

11. **Invited seminar**, *Coalescing Black Hole-Neutron Star Binaries as Short Gamma-Ray Burst Progenitors and Sources of Gravitational Radiation*, Sapienza – Università di Roma, Rome, Italy [16/05/2011]

10. *The dynamics of compact binary inspirals and mergers*, at the *CompStar Workshop*, Università di Catania, Catania, Italy [10/05/2011]

9. *Nuclear equation of state signatures in the gravitational radiation of compact binary inspirals*, at the *SFB 2011 Spring Meeting*, AEI, Golm, Germany [22/02/2011]

8. *Will the Inspiral of a Black Hole-Neutron Star Binary Tell us About the Nuclear Equation of State?*, at the *Gravitational-Wave Physics & Astronomy Workshop*, University of Wisconsin, Milwaukee (WI), USA [26/01/2011]

7. *A Relativistic Toy Model for Black Hole-Neutron Star Mergers*, for the *SFB/TR7 Videoseminars*, AEI, Golm, Germany [17/01/2011]

2010

6. *Black Hole-Neutron Star Mergers and Short GRBs: a Relativistic Toy Model*, at the *Multimessenger Emissions from Sources of Gravitational Waves Workshop*, São Sebastião, Brazil (SP), Brazil [02/12/2010]

5. *Black Hole-Neutron Star Coalescing Binaries*, at the *Problemi Attuali in Fisica Teorica* conference, Vietri Sul Mare (SA), Italy [30/03/2010]

2009

4. **Invited talk**, *Compact Gravitational Wave Sources*, at the *Società Italiana di Fisica* (Italian Physics Society) meeting, Bari, Italy [28/09/2009]

3. *A Semi-relativistic Model of Tidal Interactions in BH-NS Coalescing Binaries*, at the *Neutron Star Dynamics* meeting, Monte Porzio Catone (Rome), Italy [23/04/2009]

2008

2. *Tidal Effects in BH-NS Binaries*, at the *Neutron Star Dynamics* meeting, Gregynog (Newtown), UK [02/02/2008]

2007

1. *Tidal Effects in Binary Coalescence*, at the *Problemi Attuali in Fisica Teorica* conference, Vietri Sul Mare (SA), Italy [03/04/2007]

Posters

09/2018: R. Dudi, F. Pannarale, T. Dietrich, M. Hannam, S. Bernuzzi, F. Ohme, B. Brügmann, *Relevance of tidal effects and post-merger dynamics for binary neutron star parameter estimation*, at the *LIGO-Virgo Collaboration meeting*, Maastricht, Netherlands [**won the best poster award**]

06/2015: F. Pannarale, F. Ohme, *Joint Gravitational Wave and Electromagnetic Observations of Neutron-Star–Black-Hole Coalescing Binaries*, at the *Gravitational-Wave Physics & Astronomy Workshop*, Osaka, Japan