Curriculum Vitae

Alessandra Buonanno

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Personal Information

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- **Nationality**: Italian (by birth), USA (naturalized)
- **Current addresses**: Max Planck Institute for Gravitational Physics (Albert Einstein Institute)
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- **Current positions**: Director, Max Planck Institute for Gravitational Physics and College Park Professor at University of Maryland
- **E-mail address**: `alessandra.buonanno@aei.mpg.de, buonanno@umd.edu`
- **Languages spoken**: Italian (mother tongue), English and French

Education

- 1996, Ph.D. in Physics, University of Pisa, Italy
  Title of Ph.D. thesis: *Quantum vacuum fluctuations in gravity and string cosmology.*
  Supervisor: Prof. M. Maggiore (University of Geneva, Switzerland)
- 1993, Master in Physics (*Laurea*), University of Pisa, with first class honors (score 110/110 summa cum laude)
  Title of Master thesis: *Energy momentum tensor for lattice scalar field theories improved with Symanzik technique.*
  Supervisor: Prof. G. Curci (University of Pisa, Italy)

Employment

- Jan-Aug 1997: Visiting research associate at the Theoretical Division of CERN, Geneva, Switzerland.

- Sep 1997-Sep 1999: Postdoctoral Fellow, Institut des Hautes Etudes Scientifiques (IHES), Bures-sur-Yvette (Paris), France.
- Oct 1999-Nov 2002: Richard C. Tolman Prize Postdoctoral Fellow, Caltech, Pasadena, CA.
- Dec 2001 - Dec 2004: "Chargée de Recherche de 1ere classe" (CR1) of CNRS, *Institut d'Astrophysique de Paris* (IAP), Paris, France.
- Jan 2005 - Aug 2005: "Chargée de Recherche de 1ere classe" (CR1) of CNRS, *Laboratoire d'Astroparticule et Cosmologie* (APC), Paris, France.
- Aug 2005 - Aug 2012: *On leave of absence* from the *Laboratoire d'Astroparticule et Cosmologie* (APC), Paris, France.
- 2005-2010: Associate Professor of Physics, Department of Physics, University of Maryland, College Park, MD.
- 2010-2014: Professor of Physics, Department of Physics, University of Maryland, College Park, MD.
- 2014-...: College Park Professor, Department of Physics, University of Maryland, College Park, MD.
- 2014-...: Director, Max Planck Institute for Gravitational Physics, Potsdam-Golm, Germany.
- Jan-Oct 2002: Visiting associate at Caltech, Pasadena, CA.
- July-Aug 2003: Visiting associate at Caltech, Pasadena, CA.
- 2005-2014: Visiting associate at Caltech, Pasadena, CA.
- Jan 2014-present: Scientific member of the Max Planck Society.

Research, Scholarly and Creative Activities

Publications

- B. Szilagyi, J. Blackman, A. Buonanno, A. Taracchini, H.P. Pfeiffer, M. A. Scheel, T. Chu, L.E. Kidder and Y. Pan, **Numerical relativity reaching into post-Newtonian territory: a compact-object binary simulation spanning 350 gravitational-wave cycles**, arXiv:1502.04953 [gr-qc] (submitted to Phys. Rev. Lett.).
- A. Buonanno and B. Sathyaprakash, **Sources of Gravitational Waves: Theory and Observations**, arXiv:1410.7832 [gr-qc].
- K. Taniguchi, M. Shibata, and A. Buonanno, **Quasiequilibrium sequences of binary neutron stars undergoing dynamical scalarization**, Phys. Rev. **D91** (2015) 024033, arXiv:1410.0738 [gr-qc].
- A. Taracchini, A. Buonanno, G. Khanna, and S.A. Hughes, **Small mass plunging into a Kerr black hole: Anatomy of the inspiral-merger-ringdown waveforms**, Phys. Rev. **D90** (2014) 084025, arXiv:1404.1819 [gr-qc].
- K. Belczynski, A. Buonanno, M. Cantiello, D. E. Holz, C. L. Fryer, I. Mandel, M.C. Miller, and Marek Walczak, **The Formation and Gravitational-Wave Detection of Massive Stellar Black-Hole Binaries**, Astrophys. J. **789** (2014) 120, arXiv:1403.0677 [astro-ph.HE].

- LIGO Scientific Collaboration and Virgo and NINJA-2 Collaborations, **The NINJA-2 project: Detecting and characterizing gravitational waveforms modelled using numerical binary black hole simulations** , Class. Quant. Grav. 31 (2014) 115004, arXiv:1401.0939 [gr-qc].
- Y. Pan, A. Buonanno, A. Taracchini, M. Boyle, L.E. Kidder, A.H. Mroue, H.P. Pfeiffer, M.A. Scheel, B. Szilagyi, and A. Zenginoglu, **Stability of nonspinning effective-one-body model in approximating two-body dynamics and gravitational-wave emission**, Phys. Rev. **D89** (2014) 084006(R), arXiv:1311.2565 [gr-qc].
- A. Taracchini, A. Buonanno, Y. Pan, T. Hinderer, M. Boyle, D.A. Hemberger, L.E. Kidder, G. Lovelace, A.H. Mroue, *et al.*, **Effective-one-body model for black-hole binaries with generic mass ratios and spins**, Phys.Rev. **D89** (2014) 061502 (R), arXiv:1311.2544 [gr-qc].
- C. Capano, Y. Pan, and A. Buonanno, **Impact of Higher Harmonics in Searching for Gravitational Waves from Non-Spinning Binary Black Holes**, Phys. Rev. **D89** (2014) 102003, arXiv:1311.1286 [gr-qc].
- M. Shibata, K. Taniguchi, H. Okawa, and A. Buonanno, **Coalescence of binary neutron stars in a scalar-tensor theory of gravity**, Phys. Rev. **D89** 084005, arXiv:1310.0627 [gr-qc].
- T. Hinderer, A. Buonanno, A.H. Mroué, D.A. Hemberger, G. Lovelace, H.P. Pfeiffer *et al.*, **Periastron advance in spinning black hole binaries: comparing effective-one-body and Numerical Relativity** , Phys. Rev. **D88** (2013) 084005, arXiv:1309.0544 [gr-qc].
- A. Le Tiec, A. Buonanno, A.H. Mroué, H.P. Pfeiffer, D.A. Hemberger, G. Lovelace *et al.*, **Periastron Advance in Spinning Black Hole Binaries: Gravitational Self-Force from Numerical Relativity**, Phys. Rev. **D88** (2013) 124027, arXiv:1309.0541 [gr-qc].
- S. Marsat, A. Bohé, L. Blanchet, A. Buonanno, **Next-to-leading tail-induced spinorbit effects in the gravitational radiation flux of compact binaries**, Class. Quant. Grav. **31** (2014) 025023, arXiv:1307.6793 [gr-qc].
- Y. Pan, A. Buonanno, A. Taracchini, L. E. Kidder, A. H. Mroue, H. P. Pfeiffer, M.A. Scheel, and B. Szilagyi, **Inspiral-merger-ringdown waveforms of spinning, precessing black-hole binaries in the effective-one-body formalism**, Phys. Rev. **89** (2014) 084006, arXiv:1307.6232 [gr-qc].
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- A. Taracchini, A. Buonanno, S.A. Hughes, and K. Gaurav, **Modeling the horizon-absorbed gravitational flux for equatorial-circular orbits in Kerr spacetime**, Phys. Rev. **D88** (2013) 044001, arXiv:1305.2184 [gr-qc].
- L. Blanchet, A. Buonanno and A. Le Tiec, **First Law of Mechanics for Black Hole Binaries with Spins**, Phys. Rev. **D87** (2013) 024030, arXiv:1211.1060 [gr-qc].
- T. Littenberg, J. Baker, A. Buonanno and B. Kelly, **Systematic biases in parameter estimation of binary black-hole mergers**, Phys. Rev. **D87** (2013) 104003, arXiv:1210.0893 [gr-qc].
- A. Buonanno, G. Faye, and T. Hinderer, **Spin effects on gravitational waves from inspiraling compact binaries at second post-Newtonian order**, Phys. Rev. **D87** (2013) 044009, arXiv:1209.6349 [gr-qc].
- A. Taracchini, Y. Pan, A. Buonanno, E. Barausse, M. Boyle, T. Chu, G. Lovelace, H. P. Pfeiffer, M.A. Scheel, **A prototype effective-one-body model for non-precessing spinning inspiral-merger-ringdown waveforms**, Phys. Rev. **D86** (2012) 024011, arXiv:1202.0790 [gr-qc].
- E. Barausse, A. Buonanno, and A. Le Tiec, **The complete non-spinning effective-one-body metric at linear order in the mass ratio**, Phys.Rev. **D85** (2012) 064010, arXiv:1111.5610 [gr-qc].
- A. Le Tiec, E. Barausse, and A. Buonanno, **Gravitational Self-Force Correction to the Binding Energy of Compact Binary Systems**, Phys. Rev. Lett. **108** (2012) 131103, arXiv:1111.5609 [gr-qc].

- E. Barausse, A. Buonanno, S.A. Hughes, G. Khanna, S. O'Sullivan, and Y. Pan, **Modeling multipolar gravitational-wave emission from small mass-ratio mergers**, Phys. Rev. **D85** (2012) 024046, arXiv:1110.3081 [gr-qc].
- E. Barausse, and A. Buonanno, **Extending the effective-one-body Hamiltonian of black-hole binaries to include next-to-next-to-leading spin-orbit couplings**, Phys. Rev. **D84** (2011) 104027, arXiv:1107.2904 [gr-qc].
- A. Le Tiec, A.H. Mroue, L. Barack, A. Buonanno, H.P. Pfeiffer, N. Sago, and A. Taracchini, **Periastron Advance in Black Hole Binaries**, Phys. Rev. Lett. **107** (2011) 141101, arxiv:1106.3278 [gr-qc].
- Y. Pan, A. Buonanno, M. Boyle, L.T. Buchman, L.E. Kidder, H.P. Pfeiffer, and M.A. Scheel, **Inspiral-merger-ringdown multipolar waveforms of nonspinning black-hole binaries using the effective-one-body formalism**, Phys. Rev. **D84** (2011) 124052, arXiv:1106.1021 [gr-qc].
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- K.G. Arun, A. Buonanno, G. Faye and E. Ochsner, **Higher-order spin effects in the amplitude and phase of gravitational waveforms emitted by inspiraling compact binaries: Ready-to-use gravitational waveforms** , Phys. Rev. **D79** (2009) 104023, arXiv:0810.5336 [gr-qc].

- M. Boyle, A. Buonanno, L. Kidder, A. Mroue, Y. Pan, H. Pfeiffer, and M. Scheel, **High-accuracy numerical simulation of black-hole binaries: Computation of the gravitational-wave energy flux and comparisons with post-Newtonian approximants**, Phys. Rev. **D78** (2008) 104020, arXiv:0804.4184 [gr-qc].
- A. Buonanno and C. Ungarelli, **Relic gravitons and string pre-big-bang cosmology**, Lect. Notes Phys. **737**, 845 (2008).
- A. Buonanno, L. Kidder, and L. Lehner, **Estimating the spin of the final black hole**, Phys. Rev. **D77** (2008) 026004, arXiv:0709.3839 [astro-ph].
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- A. Buonanno, Y. Pan, J.G. Baker, J. Centrella, B.J. Kelly, S.T. McWilliams, and J.R. van Meter, **Faithful templates for non-spinning binary black holes using the effective-one-body approach**, Phys. Rev. **D76** (2007) 104049, arXiv:0706.3732 [gr-qc].
- Y. Pan, A. Buonanno, J. Baker, J. Centrella, B. Kelly, S. McWilliams, F. Pretorius, and J. van Meter, **Data-analysis driven comparison between analytic and numerical waveforms: nonspinning case**, Phys. Rev. **D77** (2008) 024014, arXiv:0704.1964 [gr-qc].
- J. Schnittman and A. Buonanno, **The distribution of recoil velocities from merging black holes**, Astrophys. J. **662**, L63 (2007) [astro-ph/0702641].
- A. Buonanno, G. Cook and F. Pretorius, **Inspiral, merger and ring-down of equal-mass black-hole binaries**, Phys. Rev. **D75**, 124018 (2007) [gr-qc/0610122].
- G. Sigl, J. Schnittman and A. Buonanno, **Gravitational-wave background from compact objects embedded in AGN accretion disks**, Phys. Rev. **D75** (2007) 024034 [gr-qc/0610180].
- L. Blanchet, A. Buonanno and G. Faye, **Higher-order spin effects in the dynamics of compact binaries. II. Radiation field**, Phys. Rev. **D74** (2006) 104034 [gr-qc/0605140].
- G. Faye, L. Blanchet, A. Buonanno, **Higher-order spin effects in the dynamics of compact binaries. I. Equations of motion**, Phys. Rev. **D74** (2006) 104033 [gr-qc/0605139].
- V. Mandic and A. Buonanno, **Accessibility of the Pre-Big Bang Models to LIGO**, Phys. Rev. **D73** (2006) 063008 [astro-ph/0510341].
- A. Buonanno, Y. Chen and T. Damour, **Transition from adiabatic inspiral to plunge in precessing compact binaries**, Phys. Rev. **D74** (2006) 104005 [gr-qc/0508067].
- A. Buonanno, Y. Chen, Y. Pan, H. Tagoshi and M. Vallisneri, **Detecting gravitational waves from precessing binaries of spinning compact objects. II. Search implementation for low-mass binaries**, Phys. Rev. **D72** (2005) 084027 [gr-qc/0508064].
- A. Buonanno, G. Sigl, G. Raffelt, T. Janka and E. Mueller, **Stochastic Gravitational Wave Background from Cosmological Supernovae**, Phys. Rev. **D72** (2005) 084001 [astro-ph/0412277].
- E. Berti, A. Buonanno and C.S. Will, **Estimating spinning binary parameters and testing alternative theories of gravity with LISA**, Phys. Rev. **D71** (2005) 084025 [gr-qc/0411129].
- M. Hartl and A. Buonanno, **The dynamics of precessing binary black holes using the post-Newtonian approximation**, Phys. Rev. **D71** (2005) 024027 [gr-qc/0407091].
- A. Buonanno, Y. Chen, Y. Pan and M. Vallisneri, **A quasi-physical family of gravity-wave templates for precessing binaries of spinning compact objects: II. Application to double-spin precessing binaries**, Phys. Rev. **D70** (2004) 104003 [gr-qc/0405090].

- Y. Pan, A. Buonanno, Y. Chen and M. Vallisneri, **A physical family of gravity-wave templates for precessing binaries of spinning compact objects: I. Application to single-spin precessing binaries**, Phys. Rev. **D69** (2004) 104017 [gr-qc/0310034].
- A. Buonanno and Y. Chen, **Improving the sensitivity to gravitational-wave sources by modifying the input-output optics of advanced interferometers**, Phys. Rev. **D69** (2004) 102004 [gr-qc/0310026].
- A. Buonanno, Y. Chen and N. Mavalvala, **Quantum noise in laser-interferometer gravitational-wave detectors with heterodyne readout scheme**, Phys. Rev. **D67** (2003) 122005 [gr-qc/0302041].
- A. Buonanno, Y. Chen and M. Vallisneri, **Detecting gravitational waves from precessing binaries of spinning compact objects: Adiabatic limit**, Phys. Rev. **D67** (2003) 104025 [gr-qc/0211087].
- A. Buonanno and Y. Chen, **Scaling law in signal-recycled laser interferometer gravitational-wave detectors**, Phys. Rev. **D67** (2003) 062002 [gr-qc/0208048].
- A. Buonanno, Y. Chen and M. Vallisneri, **Detection template families for gravitational waves from the final stages binary–black-hole inspirals: Nonspinning case**, Phys. Rev. **D67** (2003) 024016 [gr-qc/0205122].
- A. Buonanno and Y. Chen, **Signal recycled laser-interferometer gravitational-wave detectors as optical springs**, Phys. Rev. **D65** (2002) 042001 [gr-qc/0107021].
- A. Buonanno and Y. Chen, **Quantum noises in second generation laser interferometric gravitational-wave detectors**, Phys. Rev. **D64** (2001) 042006 [gr-qc/0102012].
- A. Buonanno and T. Damour, **The fate of classical inhomogeneities in pre-big-bang string cosmology**, Phys. Rev. **D64** (2001) 043501 [gr-qc/0102102].
- A. Buonanno and Y. Chen, **Optical noise correlations and beating the standard quantum limit in LIGO-II**, Class. Quantum Grav. **18** (2001) L95-L101 [gr-qc/0010011].
- A. Buonanno, M. Lemoine and K.A. Olive, **Reheating and dangerous relics in pre-big-bang string cosmology**, Phys. Rev. **D62** (2000) 083513 [hep-th/0006054].
- A. Buonanno, **Reduction of the two-body dynamics into a one-body description in classical electrodynamics**, Phys. Rev. **D62** (2000) 104022 [hep-th/0004042].
- A. Buonanno and T. Damour, **Transition from adiabatic inspiral to plunge in binary black hole coalescences**, Phys. Rev. **D62** (2000) 064015 [gr-qc/0001013].
- A. Buonanno and T. Damour, **Effective one-body approach to general relativistic two-body dynamics**, Phys. Rev. **D59** (1999) 084006 [gr-qc/9811091].
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- A. Buonanno, M. Gasperini, M. Maggiore and C. Ungarelli, **Expanding and contracting universes in third quantized string cosmology**, Class. Quant. Grav. **14** (1997) L97-L103 [hep-th/9701146].
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- B. Alles, A. Buonanno and G. Cella, **Perturbation theory predictions and Monte Carlo simulations for the 2-d $O(n)$ non-linear σ-models**, Nucl. Phys. **B500** (1997) 513 [hep-lat/9701001].
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- A. Buonanno, G. Cella and G. Curci, **Lattice energy-momentum tensor with Symanzik improved actions**, Phys. Rev. **D51** (1995) 4494 [hep-lat/9506008].

Extension Publications [1]

- B. Abbott et al. (LIGO Scientific Collaboration), **Detector description and performance for the first coincidence observations between LIGO and GEO**, Nucl. Instrum. Meth. A **517** (2004) 154-179, [gr-qc/0308043].
- B. Abbott et al. (LIGO Scientific Collaboration), **Setting upper limits on the strength of periodic gravitational waves using the first science data from the GEO600 and LIGO detectors**, Phys. Rev., **D69** (2004) 082004, [gr-qc/0308050].
- B. Abbott et al. (LIGO Scientific Collaboration), **First upper limits from LIGO on gravitational wave bursts**, Class. Quantum Grav. **21** (2004) S677-S684, [gr-qc/0312056] and Phys. Rev. **D69** (2004) 102001.
- B. Abbott et al. (LIGO Scientific Collaboration), **Analysis of LIGO data for gravitational waves from binary neutron stars**, Phys. Rev. **D69** (2004) 122001, [gr-qc/0308069].
- B. Abbott et al. (LIGO Scientific Collaboration), **Upper limits on the strength of periodic gravitational waves from PSR J1939+2134**, Class. Quant. Grav. **21** (2004) S671-S676, [gr-qc/0311023].
- B. Abbott et al. (LIGO Scientific Collaboration), **Analysis of first LIGO science data for stochastic gravitational waves**, Phys. Rev. **D69** (2004) 122004, [gr-qc/0312088].
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- B. Abbott et al. (LIGO Scientific Collaboration), **A search fro gravitational waves associated with the gamma ray burst GRB 030329 using LIGO detectors**, Phys. Rev. **D72** (2005) 042002 [gr-qc/0501068].
- B. Abbott et al. (LIGO Scientific Collaboration), **Upper limits on gravitational wave bursts in LIGO's second science run**, Phys. Rev. **D72** (2005) 062001 [gr-qc/0505029].
- B. Abbott et al. (LIGO Scientific Collaboration), **Search for gravitational waves from galactic and extra-galactic binary neutron stars**, Phys. Rev. **D72** (2005) 082001 [gr-qc/0505041].
- B. Abbott et al. (LIGO Scientific Collaboration), **Search for gravitational waves from primordial black hole binary coalescences in the galactic halo**, Phys. Rev. **D72** (2005) 082002 [gr-qc/0505042].
- B. Abbott et al. (LIGO Scientific Collaboration), **Upper limits from the LIGO and TAMA detectors on the rate of gravitational-wave bursts**, Phys. Rev. **D72** (2005) 122004 [gr-qc/0507081].

- B. Abbott et al. (LIGO Scientific Collaboration), **First all-sky upper limits from LIGO on the strength of periodic gravitational waves using the Hough transform**, Phys. Rev. **D72** (2005) 102004 [gr-qc/0508065].
- B. Abbott et al. (LIGO Scientific Collaboration), **Upper Limits on a stochastic background of gravitational waves**, Phys. Rev. Lett. **95** (2005) 221101 [astro-ph/0507254].
- ⋆ B. Abbott et al. (LIGO Scientific Collaboration), **Search for gravitational waves from binary black hole inspirals in LIGO data**, Phys. Rev. **D73** (2006) 062001 [gr-qc/0509129].
- B. Abbott et al. (LIGO Scientific Collaboration), **Search for gravitational-wave bursts in LIGO's third science run**, Classical and Quantum Gravity **23** (2006) S29 [gr-qc/0511146].
- B. Abbott et al. (LIGO Scientific Collaboration), **Joint LIGO and TAMA300 search for gravitational waves from inspiralling neutron star binaries**, Phys. Rev. **D73** (2006) 102002 [gr-qc/0512078].
- B. Abbott et al. (LIGO Scientific Collaboration), **Coherent searches for periodic gravitational waves from unknown isolated sources and Scorpius X-1**, Phys. Rev. **D76** (2007) 082001, [gr-qc/0605028].
- ⋆ B. Abbott et al. (LIGO Scientific Collaboration), **Searching for a stochastic background of gravitational waves with LIGO**, Astrophys. J. **659** (2007) 918 [astro-ph/0608606].
- B. Abbott et al. (LIGO Scientific Collaboration), **Upper limits on gravitational wave emission from 78 pulsars**, Phys. Rev. **D76** (2007) 042001 [gr-qc/0702039].
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- J. Aasi et al. (The LIGO Scientific and the Virgo Collaborations), **Search for gravitational radiation from intermediate mass black hole binaries in data from the second LIGO-Virgo joint science run**, Phys.Rev. **D89** (2014) 122003, arXiv:1404.2199 [gr-qc].
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- J. Aasi et al. (The LIGO Scientific and the Virgo Collaborations), **A directed search for gravitational waves from Scorpius X-1 with initial LIGO**, arXiv:1412.0605 [gr-qc].
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Chapters in Books

2014, A. Buonanno and B. Sathyaprakash, **Sources of Gravitational Waves: Theory and Observations**, arXiv:1410.7832 [gr-qc], chapter in the book *General Relativity and Gravitation: A Centennial Perspective* (edited by A. Ashtekar et al.) Cambridge University Press.

2011, A. Buonanno, **Gravitational Wave Astronomy**, chapter in the book *Astronomy at the Frontiers of Science* (edited by Jean-Pierre Lasota), Springer-Verlag.

Talks

Seminars at Conferences and Schools

- Feb 2014, **The Discovery Potential of Gravitational-Wave Experiments**, Leiden, Netherlands.
- June 2014, **Learning about black holes and neutron stars using ground-based gravitational-wave detectors** (invited talk), Astroparticle Physics 2014, Amsterdam, Netherlands.
- July 2014, **Current Status and Unsolved Problems in Gravitational Waves** (invited talk), Unsolved problems in Astrophysics and Cosmology, Eötvös University, Budapest, Hungary.
- June 2013, **Closing in on the shape of gravitational waves from binary systems** (invited talk), YKIS2013, Yukawa Institute, Kyoto, Japan.
- May 2013, **Modeling gravitational waves from compact-object coalescences** (invited talk), GR Science Workshop, South Padre Island, TX.
- Sep 2012, **Modeling gravitational waves from compact binary systems**, *Chirps, Mergers and Explosions: The Final Moments of Coalescing Compact Binaries*, KITP, Santa Barbara, CA.
- Nov 2011, **Modeling the Inspiral, Merger and Ringdown of Compact Binaries: Successes and Open Questions** (invited talk), *Effective Field Theory and Gravitational Physics Workshop*, Perimeter Institute, Waterloo.

- June 2011, **Modeling the Final Moments of Coalescing Compact Binaries** (invited talk), *APC/PI/Solvay Cosmological Frontiers in Fundamental Physics Workshop*, Paris, France.
- May 2011, **Modeling the Final Moments of Coalescing Compact Binaries** (invited talk), *Advances and Challenges in Computational General Relativity*, Brown University, Providence, RI.
- October 2010, **Probing the Early Universe and Cosmology by detecting gravitational waves** (invited talk), *Gravitational Waves 2010*, University of Minnesota, Minneapolis, MN.
- July 2010, **Modeling the Dynamics and Gravitational-Wave Emission of Extreme Mass Ratio Inspirals**, 19^{th} International Conference on General Relativity and Gravitation, Mexico City, Mexico.
- June 2010, **Accurate Modeling of the Dynamics and Gravitational-Wave Emission of Coalescing Binary Systems** (invited talk), 8^{th} International LISA Symposium, Stanford University, CA.
- August 2009, **Modeling the Dynamics and Gravitational-Wave Emissions of Coalescing Binary Black Holes**, Workshop on *Matter and Electromagnetic Fields in Strong Gravity* (invited talk), CSCAMM, University of Maryland, College Park, MD.
- July 2009, **Modeling binary black-hole coalescences within the effective-one-body approach**, 12^{th} *Marcel Grossmann meeting*, Paris, France.
- July 2009, **Hamiltonian for a spinning test-particle in curved spacetime**, 12^{th} *Marcel Grossmann meeting*, Paris, France.
- June 2009, **Probing the early Universe and cosmology by detecting gravitational waves**, (plenary talk), *The Unity of the Universe*, Institute of Cosmology and Gravitation, University of Portsmouth, UK.
- April 2009, **Probing the Coalescence and Recoil: Modeling the Dynamics and Gravitational Wave Emission from Binary Black Holes** (invited talk), *UC Irvine Workshop on Intermediate-Mass Black Holes: From First Light to Galactic Nuclei*, University of California, Irvine, CA.
- December 2008, **Catching a Wave: Creating Profiles of Gravitational Wave Signals from Binary Black Holes**, NSF Mini-Gravity Symposium, National Science Foundation, Arlington, VA.
- November 2008, **Gravitational-Wave Physics**, Maryland-GSFC Day, NASA Goddard Space Flight Center, Greenbelt, MD.
- June 2008, **Interfacing analytical and numerical relativity in modeling binary black-hole coalescences**, (invited talk), *Post Newton 2008, International workshop*, Jena, Germany.
- June 2008, **Probing the early Universe and cosmology by detecting gravitational waves**, (plenary talk), *PASCOS 2008*, Perimeter Institute, Waterloo, Canada.
- May 2008, **Interfacing analytical and numerical relativity in modeling binary black hole coalescences**, (invited talk), APS meeting, St. Louis, MO. [canceled]
- Dec 2007, **Interfacing analytical and numerical relativity**, (plenary talk), *The 6th International Conference on Gravitation and Cosmology*, IUCAA, Pune, India.
- Dec 2007, **Modeling binary black-hole coalescences**, (plenary talk), *The 17th Workshop on General Relativity and Gravitation in Japan*, Nagoya University, Nagoya, Japan.
- Dec 2007, **Gravitational waves: Opening a new window on the Universe**, (invited talk), *Japanese-American Kavli Frontiers of Science Symposium*, Shonan Village, Kanagawa, Japan.
- Aug 2007, **Interfacing analytical and numerical relativity: binary black hole coalescences**, (invited talk), *CITA/CIFAR Focus group on gravitational waves and numerical relativity*, CITA, Toronto, Canada.
- Juy 2007, **Binary black-hole coalescence**, (invited talk), *Astrophysics of compact objects*, Huangshan, China.
- Feb 2007, **Matching analytic to numerical waveforms**, (invited talk), *Numerical Relativity meets 3 Post-Newtonian: A workshop at the interface between numerical relativity and post-Newtonian theory*, Washington University, St. Louis, MO.

- Dec 2006, **Probing fundamental physics and the early Universe by detecting relic gravitational waves** (plenary talk), *Texas Symposium*, Melbourne, Australia.
- Nov 2006, **Analytical methods meet numerical relativity** (invited talk), LIGO Scientific Collaboration meeting, Boston.
- July 2006, **Analytical approach to coalescing binary black holes** (plenary talk), 11^{th} *Marcel Grossmann meeting*, Berlin, Germany.
- June 2006, **Data analysis of supermassive black holes with LISA** (plenary talk), 6^{th} *International LISA Symposium*, Goddard Space Flight Center, MA.
- May 2006, **Analytical modelling of binary black holes** (invited talk), Astrophysical aspects of numerical relativity, Guanajuato, Mexico.
- May 2006, **Source modeling, detection and science of gravitational waves emitted by inspiralling compact binaries** (invited talk), APS meeting, Dallas, TX.
- Nov 2005, **Predictions for the last stages of inspiral and plunge using analytical techniques** (invited talk), Numerical Relativity 2005: Compact Binaries, NASA Goddard Space Flight Center, Greenbelt, MD.
- Dec 2004, **Estimating binary parameters in alternative theories of gravity with LISA**, 9^{th} Gravitational-Wave Data Analyis Workshop, Annecy, France.
- Dec 2004, **Advanced gravitational-wave detectors** et **Detecting gravitational waves from inspiralling binaries**, VIRGO-EGO Scientific Forum (VESF), Pisa, Italy.
- June 2003, **Review of quantum noise in advanced laser-interferometer gravitational-wave detectors** (invited talk), *Gravitation: A Decennial Perspective*, Penn State University, PA.
- June 2003, **Overview of gravitational-wave sources for ground- and space-based detectors** (plenary talk), *CAPP 2003*, CERN, Geneva, Switzerland.
- June 2003, **Gravitational waves and the early Universe** (plenary talk), CEA/SPhT: 8^{th} Claude Itzykson Conference, Gif-sur-Yvette (Paris), France.
- Sep 2002, **Gravitational waves from early Universe: Where theoretical predictions and experiments stand** (plenary talk) *Cosmo 02, International Workshop on Particle Physics and the Early Universe*, Chicago, IL.
- August 2002, **Detection template families for spinning binary black holes**, *LIGO Scientific Community meeting*, Hanford Observatory, WA.
- March 2002, **The late inspiral of compact binaries: the epoch when post-Newtonian expansions become suspect** and **Gravitational waves from late stages of inspiraling black hole binaries: spinning and nonspinning case** *Sources Workshop, in Livingstone Obervatory*, LO.
- Nov 2001, **Advanced interferometric gravitational-wave detectors** (invited talk), *Gravitational Wave Phenomenology Workshop*, Penn State University, PA.
- July 2001, **Gravitational waves from inspiraling binary black holes** (plenary talk) and **Signal-recycled gravitational-wave interferometers**, *Amaldi Conference on Gravitational Waves*, Perth, Australia.
- March 2001, **Effective-one-body approach to coalescing binary black holes**, and **Quantum noise in signal-recycled gravitational-wave interferometers: beating the standard quantum limit**, and **Spinning binary black holes: dynamics and gravitational waveforms**, *LIGO Scientific Community Meeting*, Baton Rouge, LO.
- Feb 2001, **Quantum nondemolition theory with LIGO-II**, *Gravitational Wave Advanced Detectors Workshop*, Aspen, CO.
- Sep 2000, **The Early Universe, the Present Universe**, seminar for the SIGRAV prize, XIV SIGRAV *Congress on General Relativity and Gravity Physics*, Genoa, Italy.
- July 2000, **Binary black hole coalescences: transition from the adiabatic inspiral to the plunge** and **Birth of the hot big bang era in pre-big bang string cosmology**, 9^{th} *Marcel Grossmann Meeting*, Roma, Italy.

- June 2000, **Late dynamical evolution of binary black holes**, *Third Capra Ranch Meeting on Gravitational Radiation Reaction*, Caltech, Pasadena, CA.
- March 2000, **Binary black hole coalescences: transition from inspiral to the plunge**, 16th *Pacific Coast Gravity Meeting*, Caltech, Pasadena, CA.
- July 1999, **Magnetic seeds from pre-big bang cosmology**, *Les Houches Summer School Session* LXXI: *The primordial Universe*, Les Houches, France.
- June 1999, **Could the universe have evolved from a generic classical string vacuum?**, *Current issues in string cosmology*, IHES, Bures-sur-Yvette, France.
- Jan 1999, **Coalescing binary systems: an effective metric approach**, *Moriond* 99*: Gravitational waves and Experimental gravity*, Les Arcs, France.
- Dec 1998, **Initial conditions in pre-big bang string cosmology**, 19^{th} *Texas Symposium on Relativistic Astrophysics*, Paris, France.
- Avril 1998, **Classical inhomogeneities in pre-big bang cosmology: backward in time and toward the singularity**, *Annual meeting on current problems in theoretical physics*, Vietri sul Mare, Salerno, Italy.
- Jan 1998, **Primeval magnetic seeds from pre-big bang string cosmology**, *Moriond* 98*: Fundamental Parameters in Cosmology*, Les Arcs, France.
- August 1995, **Effective lagrangian for quantum black holes**, *14th International Conference on General Relativity and Gravitation*, Firenze, Italy.
- May 1995, **A model for quantum black holes**, *Annual Informal Meeting on Theoretical Physics*, Cortona, Italy.

Colloquia

- May 2013, **Advances in Solving the Two-Body Problem in General Relativity: Implications for the Search of Gravitational Waves**, Virginia Tech, VA.
- April 2012, **Advances in Solving the Two-Body Problem in General Relativity: Implications for the Search of Gravitational Waves**, Department of Physics, University of New Hampshire, Durham, NW.
- October 2011, **The Final Moments of Coalescing Compact Binaries: Modeling and Science**, Colloquium at the Institute for Theory and Computation, Astronomy Department, Harvard, Cambridge, MA.
- April 2011, **Modeling the Final Moments of Coalescing Compact Binaries**, Rochester Institute of Technology, Rochester, NY.
- April 2010, **Modeling the Dynamics and Gravitational-Wave Emission of Coalescing Binary Black Holes**, Physics Colloquium, Georgetown University, Washington, DC.
- November 2009, **Analytical modeling of the dynamics and gravitational-wave emission of binary black-hole coalescences**, Department of Physics, University of Maryland, MD.
- March 2009, **Analytical modeling of the dynamics and gravitational-wave emission of binary black-hole coalescences**, Department of Astronomy, University of Berkeley, CA.
- November 2008, **Modeling the dynamics and gravitational-wave emission of binary black hole coalescences**, Institute for Theory and Computation, Harvard Smithsonian Center for Astrophysics, Boston, MA.
- March 2007, **Binary black hole coalescence**, Astronomy Department, Columbia University, NY.
- Dec 2002, **Searching for gravitational waves from inspiraling binaries of compact objects with ground-based interferometers**, NASA Goddard Flight Space Center, Greenbelt, MD.
- Oct 2002, **Searching gravitational waves from binary systems**, Astrophysics Section, Physics Department at MIT, Cambridge, MA.
- Feb 2002, **Experimental and theoretical aspects in the search for gravitational waves**, Kavli Institute of Theoretical Physics, University of California in Santa Barbara, CA.

- Nov 2001, **The search for gravitational waves**, Physics Department, Washington University, Seattle, WA.

Lectures at schools

- Sep 2014, **The analytical/numerical relativity interface**, Physics School "General Relativity @ 99", Bad Honnef, Germany.
- July 2013, **Probing the universe and fundamental physics by detecting gravitational waves**, Lecture at the Summer School: Post-Planck Cosmology, Les Houches, France.
- May 2011, **Modeling Coalescing Compact Binaries**, Lectures at the Summer School: From the Theory to the Detectors, Cargese, France.
- June 2009, **Gravitational-wave astronomy**, Lectures at the Summer School: Exploring the Cosmological Frontiers, Perimeter Institute, Waterloo, Canada.
- Nov 2006, **Gravitational-wave data analysis**, Lectures given at the General-relativity trimester: Gravitational waves, relativistic astrophysics and cosmology, Institut Henri Poincare, Paris, France.
- August 2006, **Gravitational waves**, Lectures given at the Fabric of Spacetime Summer School, Les Houches, France
- July 2006, **Gravitational waves**, Lectures given at the Particle Physics and Cosmology Summer School, ICTP, Trieste.
- July 2005, **Gravitational Radiation**, Lectures given at the Summer SLAC Institute, Stanford, CA.
- Sep 2004, **Gravitational waves: theory and sources**, Lectures given at XIII National School in Theoretical Physics, Parma, Italy.
- Dec 2003, **Gravitational waves**, Lectures given at Scuola Normale Superiore of Pisa, Italy.
- June 2002, **Gravitational waves from the early Universe**, Lectures given at Theoretical Advanced Study Institute (TASI) in Elementary Particle Physics, University of Colorado, Boulder, CO.

Seminars at Institutes and Departments

- April 2013, **Advances in Solving the Two-Body Problem in General Relativity: Implications for the Search of Gravitational Waves**, Johns Hopkins University, Baltimore, MD.
- November 2012, **Advances in Solving the Two-Body Problem in General Relativity: Implications for the Search of Gravitational Waves**, Case Western Reserve University, Cleveland, OH.
- October 2012, **Advances in Solving the Two-Body Problem in General Relativity: Implications for the Search of Gravitational Waves**, Cornell University, Ithaca, NY.
- April 2012, **To Catch a Wave: The Hunt for Ripples in the Fabric of Space-Time**, Radcliffe Institute for Advanced Study, Harvard University, Cambridge. MA.
- February 2012, **Advances in Solving the Two-Body Problem in General Relativity: Implications for the Search of Gravitational Waves**, Columbia University, New York, NY.
- November 2011, **In Search of Gravitational Waves: Modeling the Inspiral, Merger and Ringdown of Compact Binaries**, Physics Department, MIT, Cambridge, MA.
- December 2010, **Modeling the dynamics and gravitational-wave emission of compact binaries**, Department of Physics, University of Wisconsin, Milwaukee, WI.
- September 2010, **Modeling the dynamics and gravitational-wave emission from coalescing black holes**, Institut d'Astrophysique de Paris, Paris, France.
- June 2008, **Probing the early Universe and cosmology by detecting gravitational waves**, AstroParticule et Cosmologie (APC), Paris, France.
- March 2008, **Interplaying analytical and numerical relativity in modeling binary black hole coalescences**, AEI, Hannover, Germany.

- Jan 2008, **Approximations and simulations for the construction of templates**, *Interplay between Data Analysis and Numerical Relativity Program*, KITP, Santa Barbara, CA.
- Oct 2007, **Interfacing analytical and numerical relativity in modeling binary black hole coalescences**, Caltech - JPL Association for Gravitational Wave Research, Caltech, Pasadena, CA.
- May 2005, **Source modeling, detection and science of precessing compact binaries using gravitational-wave interferometers**, Theoretical Astrophysics and Relativity Group, Caltech, Pasadena, CA.
- Jan 2005, **Quantum-optical noise in signal-recycling gravitational-wave detectors of second and third generation**, ILIAS meeting, Padova, Italy.
- Jan 2005, **Supermassive and intermediate mass black holes**, Journées LISA France, AstroParticule et Cosmologie (APC), Paris, France.
- Dec 2003, **The search for gravitational waves with ground- and space-based detectors**, Scuola Normale Superiore of Pisa, Italy.
- Sep 2003, **Gravitational waves and the very early Universe**, KITP, *Superstring Cosmology Program*, Santa Barbara, CA.
- Dec 2002, **The late inspiral of binary black holes: the epoch when Post-Newtonian expansion becomes suspect. Can we predict the gravitational signal?**, Department of Physics, University of Maryland, MD.
- June 2002, **Quantum noise in advanced laser-interferometer gravitational-wave detectors** and **The late inspiral of binary black holes: How do we detect gravitational waveforms?**, National Astronomical Observatory, Tokyo, Japan.
- June 2002, **Gravitational waves from binary–black-hole inspirals**, Department of Physics, University of Tokyo, Japan.
- May 2002, **The late inspiral of binary black holes: the epoch when Post-Newtonian expansion becomes suspect. How do we detect gravitational waveforms?**, Caltech - JPL Association for Gravitational Wave Research, Caltech, Pasadena, CA.
- April 2002, **Gravitational waves from binary–black-hole inspirals**, Department of Physics, University of Florida, Gainesville, FL.
- May 2001, **Advanced laser-interferometer gravitational-wave detectors: beating the standard quantum limit**, Service de Physique Théorique, Saclay, Gif-sur-Yvette (Paris), France.
- May 2001, **Gravitational waves from binary black-hole systems** and **Advanced laser-interferometer gravitational-wave detectors**, Department of Astronomy and Physics, University of Washington, Seattle, WA.
- April 2001, **Advanced laser-interferometer gravitational-wave detectors: beating the standard quantum limit**, Department of Astronomy, University of Berkeley, CA.
- May 2000, **Dangerous relics and reheating in pre-big bang string cosmology**, Fermilab Theoretical Astrophysics, Chicago, IL.
- May 2000, **Gravitational-wave research**, Service de Physique Théorique, Saclay, Gif-sur-Yvette (Paris), France.
- May 2000, **Gravitational-wave research with binary black hole systems**, Département d'Astrophysique et Cosmologie (DARC), Meudon (Paris), France.
- Oct 1999, **Coalescing binary systems and gravitational waves**, Dipartimento di Fisica, University of Pisa, Italy.
- May 1999, **Effective one-body approach to inspiraling binary systems**, Service de Physique Théorique, Saclay, Gif-sur-Yvette (Paris), France.
- May 1999, **Phenomenological aspects of pre-big bang string cosmology**, Institut d'Astrophysique de Paris, Paris, France.

Refereed Conference Proceedings

- B. Aylott et al., **Status of NINJA: The Numerical INJection Analysis project**, Proceedings of NRDA 2008: Numerical Relativity and Data Analysis Meeting, Class. Quant. Grav. **26** (2009) 114008, arXiv:0905.4227 [gr-qc].
- E. Berti, A. Buonanno and C. Will, **Testing general relativity and probing the merger history of massive black holes with LISA**, $9^{\rm th}$ Gravitational Wave Data Analysis Workshop, Annecy, France [gr-qc/0504017].
- A. Buonanno and Y. Chen, **Laser-interferometer gravitational-wave optical-spring detector**, 4th Amaldi Conference on Gravitational Waves, Perth, Australia, 8-13 Jul 2001, Class. Quant. Grav. **19** (2002) 1569, [gr-qc/0201063].
- A. Buonanno, **Gravitational waves from inspiraling binary black holes**, 4th Amaldi Conference on Gravitational Waves, Perth, Australia, 8-13 Jul 2001, Class. Quant. Grav. **19** (2002) 1267 [gr-qc/0203030].

Unrefereed Conference Proceedings

- L. Blanchet, A. Buonanno and G. Faye, **Third post-Newtonian spin-orbit effect in the gravitational radiation flux of compact binaries**, $9^{\rm th}$ International LISA Symposium, Paris, May 2012, arXiv:1210.0764 [gr-qc].
- A. Buonanno, **Binary black-hole coalescence**, Proceedings of *Astrophysics of compact objects*, (2007) Huangshan, China, arXiv:0709.4682 [gr-qc].
- A. Buonanno, **Gravitational waves**, Proceedings of *Fabric of Spacetime Summer School*, Les Houches, France, arXiv:0709.4682 [astro-ph].
- A. Buonanno, **Analytic modeling of binary black-hole coalescence**, Proceedings of *Eleventh Marcel Grossmann Meeting*, 2006, Berlin, Germany.
- J. Schnittman, G. Sigl and A. Buonanno, **Gravitational waves from compact objects accreting onto active galactic nuclei**, $6^{\rm th}$ International LISA Symposium, Goddard, June 2006, [astro-ph/0608596].
- A. Buonanno, **Gravitational-Wave Sources: Source Science and Statistical Methods**, GR17 (2004), Dublin, Irland.
- A. Buonanno, **TASI lectures: gravitational waves from the early Universe**, Lectures given at Theoretical Advanced Study Institute in Elementary Particle Physics (TASI 2002): Particle Physics and Cosmology: The Quest for Physics Beyond the Standard Model(s), Boulder, Colorado, 2-28 Jun 2002 [gr-qc/0303085].
- A. Buonanno, **The Early Universe, the Present Universe**, Proceedings of XIV SIGRAV *Congress on General Relativity and Gravity Physics*, Genoa, Italy.
- A. Buonanno, **Birth of hot big-bang era in pre-big bang string cosmology**, Proceedings of *Ninth Marcel Grossmann Meeting*, 2000, Roma, Italy, Report No. GRP/00/555.
- A. Buonanno and T. Damour, **Binary black hole coalescences: transition from the adiabatic inspiral to the plunge**, to be published in Proceedings of *Ninth Marcel Grossmann Meeting*, 2000, Roma, Italy [gr-qc/0011052].
- A. Buonanno, **Coalescing binary systems: an effective metric approach**, Report No. IHES-P-99-33, in *Proceedings of 34th Rencontres de Moriond: Gravitational Waves and Experimental Gravity*, 1999, Les Arcs, France.
- A. Buonanno, **Initial conditions in pre-big bang string cosmology**, Report No. IHES-P-99-32, *In electronic Proc. of 19th Texas Symposium on Relativistic Astrophysics: Texas in Paris*, 1998, Paris, France.
- A. Buonanno, **Primeval magnetic seeds from pre-big bang string cosmology**, in *Proceedings of Moriond 98: Fundamental Parameters in Cosmology*, Les Arcs, France.
- A. Buonanno, M. Maggiore and C. Ungarelli, **Stochastic background of relic gravitational waves in string cosmology**, Report No. IFUP-TH/71-96, in *Proceedings of the 12th Italian Conf. on General Relativity and Gravitational Physics*, eds. M. Bassan et al., World Scientific, Singapore, 1996.

- B. Alles, A. Buonanno and G. Cella, **The two-phase issue in the O(n) non-linear sigma models: a Monte Carlo study**, LATTICE 96: 14th International Symposium on Lattice Field Theory, June 4/8, 1996, Washington University, St. Louis, MO; Nucl. Phys. Proc. Suppl. **53** (1997) 677-679 [hep-lat/9608002].

Contracts and Grants

- 2006-2008 Alfred P. Sloan Fellowship ($40,000)
- 2006-2009 NSF grant, single P.I. ($540,000)
- 2009-2012 NSF grant, single P.I. ($980,000)
- 2012-2015 NSF grant, single P.I. ($720,000)
- 2009-2012 NASA grant, co-P.I., P.I. being Dr. J. Baker (NASA Goddard Space Flight Center) ($320,000, UMD portion)
- 2012-2015 NASA grant, co-P.I., P.I. being Dr. J. Baker (NASA Goddard Space Flight Center) ($320,000, UMD portion)

Fellowships, Prizes and Awards

- 2000, Italian Society of General Relativity and Gravitational Physics (SIGRAV) Prize 2000 for *Studies in General Relativity with applications in Astrophysics and Cosmology.*
- 1999-2002, Richard C. Tolman Prize Fellow, Caltech, Pasadena, CA.
- 2006-2008, Alfred P. Sloan Fellowship.
- 2007, Richard A. Ferrell Distinguished Faculty Fellowship, Department of Physics, University of Maryland, College Park, MD.
- 2007, Kavli-National Academy of Sciences Fellow.
- 2010, Fellow of the International Society of General Relativity and Gravitation.
- 2011-2012, William and Flora Hewlett Fellow, Radcliffe Institute for Advanced Study, Harvard University, Cambridge MA.
- 2011, Fellow of the American Physical Society (APS).
- 2013, Outstanding Referee of the American Physical Society (APS).

Reviewing activities for Journals

- Referee for Physical Review D, Physical Review Letters, and Classical and Quantum Gravity.

Other

- 2000-2005, participant in the "Memorandum of Understanding" between Caltech Relativity Theory and the LIGO Scientific Collaboration.
- Since 2003, member of "Inspiral upper limit group", LIGO Scientific Collaboration.
- Since 2005, P.I. of the "Memorandum of Understanding" between Maryland Gravitational-Wave Group and the LIGO Scientific Collaboration.
- Since 2008, participant to the Numerical INJection Analysis (NINJA) project.
- Since 2009, member of the International Society of General Relativity and Gravitation.

Teaching, Mentoring, and Advising

Courses taught in the last five years

- Spring 2014: **Special Topics in General Relativity: Gravitational Waves** (PHYS879)
- Fall 2013: **Intermediate Theoretical Methods** (PHYS374)
- Spring 2013: **Special Topics in General Relativity: Gravitational Waves** (PHYS879)
- Fall 2010: **Introduction to Gravity, Relativity and Cosmology** (PHYS675)
- Fall 2009: **Introduction to Gravity, Relativity and Cosmology** (PHYS675)
- Spring 2009: **Classical Mechanics** (PHYS410)
- Fall 2008: **Introduction to Gravity, Relativity and Cosmology** (PHYS675)
- Spring 2008: **Classical Mechanics** (PHYS410)
- Spring 2007: **Classical Mechanics** (PHYS410)
- Spring 2006: **Special Topics in General Relativity: Gravitational Waves** (PHYS879)

Advising

- **Master's**
  Advisor of University of Maryland graduate student Sergey Kurennoy.
- **Doctoral**
  Co-advisor of graduate students Michele Vallisneri (Ph.D. 2002, Caltech), Yanbei Chen (Ph.D. 2003, Caltech), and Yi Pan (Ph.D. 2006, Caltech).
  Advisor of University of Maryland graduate students Evan Ochsner (Ph.D. 2010) and Andrea Taracchini (Ph.D. 2014), Noah Sennett (Ph.D. expected 2018).
- **Postdoctoral Scholars at UMD**
  Jeremy Schnittman (2005-2007), Yi Pan (2006-2012), Etienne Racine (2007-2009), Enrico Barausse (2008-2011), Craig Robinson (2010-2011), Tyson Littenberg (2009-2012), Alexander Le Tiec (2010-2013), Tanja Hinderer (2011-present), Collin Capano (2011-2014), Sylvain Marsat (2013-present), Phil Graff (2014-present).
- **Assistant Research Scientist at UMD**
  Yi Pan (2012-2013).

Extension Activities

- July-Oct 2012, co-organizer of the KITP program *Chirps, Mergers and Explosions: The Final Moments of Coalescing Compact Binaries*, Santa Barbara, CA.
- Dec 2010, member Local Organizing Committee of *The Ins and Outs of Black Holes*, Joint Space-Science Institute Workshop, Annapolis, MD.
- July 2010, member Scientific Organizing Committee of the *19th International Conference on General Relativity and Gravitation*, Mexico City, Mexico.
- July 2009, organizer of *Interfacing analytical and numerical relativity* session at the *Twelfth Marcel Grossmann Meeting*, Paris, France.
- July 2009, member Scientific Organizing Committee of the *8th Edoardo Amaldi Conference on Gravitational Waves*, Columbia University, New York City, NY.
- Feb 2006, co-organizer of *Numerical Relativity meets 3 Post Netwonian: A Workshop at the interface between numerical relativity and post-Newtonian theory*, Washington University, St. Louis, MO.
- June 2006, local co-organizer of the *6th International LISA Symposium*, Goddard Space Flight Center, Greenbelt, MD.

- Jan 2005, co-organizer of *Journées LISA France*, AstroParticule et Cosmologie (APC), Paris.
- Dec 2004, organizer of *Source and Population Modeling for space-based detectors* session at GWDAW, Annecy, France.
- July 2004, organizer of *Gravitational-Wave Sources: Source Science and Statistical Methods* session at GR17, Dublin, Ireland.
- June 2003, co-organizer of *Gravitational Wave Physics* session at the conference *Gravitation: A Decennial Perspective*, Penn State University, PA.
- June 1999, co-organizer of the workshop Superstring Cosmology, IHES, Bures-sur-Yvette, France.

Service

Professional

- **Offices and committees memberships held in professional organizations**
  2015-present, on the Editorial Board of Physical Review D.
  2012-present, member of the Committee of International Freedom of Scientists of the American Physical Society.
  2010-2013, member of the Advisory Board of KITP, Santa Barbara, CA.
  2006-2009, member of the executive committee of the Topical Gravity Group of the American Physical Society.
  2009-present, member of the executive committee and founder of the Numerical-Relativity/Analytical-Relativity Collaboration.
- **Reviewing activities for agencies.**
  Since 2005, reviewer and panelist for the National Science Foundation.

Campus/Departmental

- Member of the doctoral defense committee for Kayhan Gultekin (supervisor being Professor C. Miller), Brendan Foster and Christopher Eling (supervisor being Professor T. Jacobson), Sean McWilliams (supervisor being Dr. J. Baker), and Enrique Pazos (supervisor being Professor M. Tiglio).
- 2006-2008, member of the Physics Council.
- 2008-2010, member of the Physics Graduate Admission Committee.
- 2008-2010, member of the Appointment, Promotion and Tenure Committee.
- 2007-2009, associate co-director of the Maryland Center for Fundamental Physics (MCFP).
- 2009-2013, physics co-director of the Joint Space-Science Institute (JSI) (between the departments of Physics, Astronomy and the NASA Goddard Flight Space Center).

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[1] Publications of LIGO Scientific Collaboration on which I am listed as a co-author. The papers marked with a star ⋆ used analytical template families or cosmological bounds on the stochastic background of gravitational waves developed in some of my papers.