

Michele Fumagalli

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Durham University
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Scientific Interests

Gas flows around galaxies, galaxy formation and evolution, the role of environment, absorption line systems, physics of the interstellar medium, star formation, stellar initial mass function.

Academic History

- 2020 **Professor**, *University of Milano Bicocca*.
- 2018 **Professor**, *Durham University*.
- 2017 **Associate Professor (Reader)**, *Durham University*.
- 2014 **Assistant Professor (Lecturer)**, *Durham University*.
- 2013 **Postdoctoral Fellow**, *Carnegie Observatories, Princeton University*.

Education

- 2016 **Postgraduate Certificate in Academic Practice**, *Durham University, UK*.
- 2012 **Ph.D. in astrophysics**, *University of California, Santa Cruz, USA*.
- 2010 **Master in astrophysics**, *University of California, Santa Cruz, USA*.
- 2008 **Laurea specialistica (MSc)**, *University of Milano Bicocca, Italy*.
- 2006 **Laurea triennale (BSc)**, *University of Milano Bicocca, Italy*.

Selected Awards and Fellowships

- 2017 **Abilitazione Nazionale Italiana**, *Professore Associato e Ordinario*.
- 2015 **Fellow of the Higher Education Academy**.
- 2014-2015 **Carnegie Visiting Associate**, *Carnegie Observatories*.
Visiting fellowship at Carnegie Observatories.
- 2012 **Lyman Spitzer Fellowship**, *Princeton University*.
Postdoctoral fellowship in theoretical astrophysics.
- 2012 **Carnegie-Princeton Fellowship**, *Carnegie Observatories, Princeton University*.
Postdoctoral fellowship in observational astrophysics.
- 2012 **Hubble Fellowship**, *Carnegie Observatories*.
Awarded to highly qualified recent postdoctoral scientists to conduct independent research.

- 2012 **CfA Fellowship**, (declined), The Harvard-Smithsonian Center for Astrophysics.
Awarded to an outstanding researcher displaying significant promise in theory or observation.
- 2012 **Miller Research Fellowship**, (declined), University of California, Berkeley.
Awarded to exceptional young scientists of great promise.
- 2011 **Price Prize in Cosmology and AstroParticle Physics**, CCAPP, Ohio State University.
Awarded in recognition of research excellence in cosmology and astro-particle physics.
- 2011 **Chancellor's Dissertation Year Fellowship**, UCSC.
Awarded based on the academic achievement of the nominee.
- 2010 **Whitford Prize**, Department of Astronomy, UCSC.
Awarded for outstanding performance during the first and second years.
- 2008 **Regents' fellowship**, UCSC.
Awarded to promising first-year graduate students.

Grant History

- 2020 **Durham Astronomy Consolidated Grant**, STFC, (Project co-PI).
- 2019 **NASA grant**, HST-GO-15637, (Science Co-PI).
- 2018 **ERC Attrattività**, Fondazione Cariplo, (PI).
- 2017 **ERC Starting Grant**, ERC, (PI).
- 2017 **Durham Astronomy Consolidated Grant**, STFC, (Project PI).
- 2015 **NASA grant**, HST-GO-14127, (Science PI).
- 2012 **NASA Hubble Fellowship**, grant HF-51305.01-A, (PI).
- 2010 **HIPACC grant**, University California, (PI).

Talks and Seminars

- Jun., 2020 **EAS 2020**, *Leiden*, invited review.
Flows around galaxies in 2020: advancements, challenges and opportunities
- Jun., 2020 **Insights into the CGM and ICM**, *IAP, France*, invited.
MUSE observations of the CGM of distant galaxies
- Apr., 2020 **Astronomy Colloquium**, *Royal Observatory/Edinburgh*, invited.
Shedding light on gas around galaxies across cosmic times
- Mar., 2020 **Astronomy Colloquium**, *INAF/Arcetri*, invited.
Shedding light on gas around galaxies across cosmic times
- Dec., 2019 **Joint Astronomy Colloquium**, *MPA-MPE-ESO*, invited.
Shedding light on gas around galaxies across cosmic times
- Oct., 2019 **CGM in Berlin 2019**, *Max Planck Society*, invited.
Gas around galaxies at $z \sim 2 - 3$: linking emission and absorption with large surveys
- Jun., 2019 **What Matter(s) Between Galaxies**, *Abbazia di Spineto, SOC*.
Gas around galaxies: connecting emission and absorption with large surveys
- Mar., 2019 **Astronomy Seminar**, *Nottingham University*, invited.
Shedding light on gas around galaxies across cosmic time
- Dec., 2018 **Twenty years of science at Bicocca**, *Milano-Bicocca University*, invited review.
Astrophysics ± 20 : Deeper, Sharper, and Bigger
- Nov., 2018 **CASTOR UV space observatory**, *The Royal Observatory Edinburgh*, invited review.
The galaxy-IGM connection
- Jun., 2017 **What Matter(s) Around Galaxies**, *Durham University*, SOC/LOC co-chair.
Probing the gaseous environment of star-forming galaxies in absorption and emission

- Apr., 2017 **Seminar, Department of Physics, University of Milano-Bicocca**, invited.
MUS(E)ing over gas flows as drivers of galaxy evolution
- May., 2016 **Cavendish Astrophysics Seminar, University of Cambridge**, invited.
Gas flows as fuel for star formation: a spotlight on strong absorption line systems
- Apr., 2016 **Astronomy Seminar, ETH Zurich**, invited.
Gas flows as fuel for star formation: a spotlight on strong absorption line systems
- Mar., 2016 **Astronomy Seminar, Stockholm University**, invited.
Gas flows as fuel for star formation: a spotlight on strong absorption line systems
- Sep., 2015 **Astronomy Seminar, INAF/Trieste**, invited.
Gas flows as fuel for star formation: a spotlight on strong absorption line systems
- Jun., 2015 **IGM@50, INAF/Firenze**, invited.
Probing gas flows near galaxies: a spotlight on Lyman Limit Systems
- Jun., 2014 **Intergalactic Matters, MPIA, Heidelberg**, invited.
A shot in the dark: the star formation rates of DLAs at $z \sim 2 - 3$
- Apr., 2014 **Colorful galaxies: a conference for Peppo Gavazzi's birthday, Como, Italy**, invited.
Can we use $H\alpha$ to trace star formation rates?
- Apr., 2014 **Exploiting VST ATLAS... and its sister surveys, Durham University**, invited.
ATLAS search for Lyman Limit Systems in quasar pairs.
- Mar., 2014 **Astronomy Friday Lunch Talks, Durham University**.
The importance of stochastic effects in stellar population synthesis.
- Jan., 2014 **DEX meeting, Durham University**.
Investigations on the gaseous environment of distant galaxies.
- Dec., 2013 **TAPIR seminar, Caltech**, invited.
Investigations on the gaseous environment of distant galaxies.
- Oct., 2013 **Metal Production and Distribution in a Hierarchical Universe, Rencontres de l'Observatoire de Paris 2013 - ESO Workshop**, invited review.
IGM abundances in the high-redshift universe.
- Aug., 2013 **Santa Cruz Galaxy Workshop, UCSC**.
Lyman limit systems and the circumgalactic medium at $z \sim 2 - 3$.
- Jun., 2013 **Intergalactic Interactions, Higgs Centre, Edinburgh**, invited.
Lyman limit systems and the circumgalactic medium at $z \sim 2 - 3$.
- Jun., 2013 **ENIGMA workshop, MPIA**, invited.
Lyman limit systems and the circumgalactic medium at $z \sim 2 - 3$.
- Apr., 2013 **Lunch Talk, Carnegie Observatories**.
Beyond the disk: The role of halo gas in galaxy formation.
- Mar., 2013 **Hubble Fellows Symposium, STScI, Baltimore**.
Optically-thick hydrogen in the $z=3$ universe
- Dec., 2012 **University of Milano-Bicocca, Milan**, invited.
The gaseous environment of distant galaxies
- Nov., 2012 **UT Astronomy Colloquium, Austin**, invited.
The gaseous environment of distant galaxies
- Sep., 2012 **Keck Science Meeting, San Diego**.
Pristine gas two billion years after the Big Bang
- Jun., 2012 **Metals in Tuscany, INAF/Firenze**, invited.
Pristine gas two billion years after the Big Bang
- May., 2012 **Price Prize lecture, CCAPP Ohio State University**, invited.
Cosmology with absorption line systems

- Apr., 2012 **Astronomy Colloquium**, *Osservatorio Astronomico di Brera*, invited.
Cosmology with absorption line systems
- Mar., 2012 **Turbulence in Cosmic Structure Formation**, *Arizona State University*.
Detection of pristine gas two billion years after the Big Bang
- Jan., 2012 **DARK Cake Meeting**, *DARK Cosmology Centre*.
Detecting cold accretion and metal poor gas around galaxies
- Jan., 2012 **219th AAS Meeting**, *Austin, TX*.
Exploring the gas cycle in high-redshift galaxies: a joint effort of theory and observations
- Dec., 2011 **Theory meeting of the Galaxy and Cosmology group**, *MPIA Heidelberg*.
Probing inflow in high-redshift galaxies
- Oct., 2011 **Theoretical Astrophysics Center seminar**, *UC Berkeley*, invited.
Exploring the gas cycle in high-redshift galaxies: a joint effort of theory and observations
- Oct., 2011 **Lunch Talk**, *Carnegie Observatories*.
Exploring the gas cycle in high-redshift galaxies: a joint effort of theory and observations
- Oct., 2011 **Astronomy Tea Talk**, *Caltech*.
Exploring the gas cycle in high-redshift galaxies: a joint effort of theory and observations
- Aug., 2011 **Santa Cruz galaxy workshop**, *Santa Cruz*.
Cold streams and primordial gas at high redshift
- Jul., 2011 **Celebrating the career of A. Wolfe**, *Schloss Ringberg*, invited.
Detecting cold streams with absorption line systems
- Jul., 2011 **MPIA**, *Heidelberg*.
Stochastic star formation and IMF (non) variation
- Jun., 2011 **Odyssey of cosmic baryons**, *Marseille*.
Detecting cold streams with absorption line systems
- Jun., 2011 **Gas in galaxies**, *Kloster Seeon, Germany*.
Detecting cold streams with absorption line systems
- Dec., 2010 **CASS, UCSD**, *San Diego*.
Gas in and around galaxies
- Aug., 2010 **Santa Cruz galaxy workshop**, *Santa Cruz*.
Gas in simulations of $z > 2$ galaxies
- May, 2010 **Como+Milano+Heidelberg+Marseille**.
Images and simulations to connect gas and stars in $z > 2$ galaxies
- Apr., 2010 **UCSC**, *Santa Cruz*.
Hunting gas and stars in galaxies across the Universe
- Aug., 2009 **Santa Cruz Galaxy Workshop**, *Santa Cruz*.
A shot in the dark: probing galaxies giving rise to DLAs at $z > 2$
- Aug., 2009 **UCSC Friday Lunch Talk**, *Santa Cruz*.
Molecular gas deficiency in HI poor galaxies
- Jun., 2009 **University of Chicago**, *Chicago*.
A shot in the dark: imaging of DLAs
- Mar., 2009 **Università dell'Insubria**, *Como, Italy*.
Star formation $z = 0 - 3$
- Dec., 2008 **CASS, UCSD**, *San Diego*.
The star formation rate and gas content in local spiral galaxies
- Jul., 2008 **Università di Milano-Bicocca**, *Milano, Italy*.
The relationship between gas content and star formation rate in spiral galaxies

Proposal History (principal investigator or primary co-investigator)

2019 ESO/VLT; 25 hours, P105.
2019 Hubble Space Telescope; 8 orbits, cycle 27.
2019 JCMT/SCUBA-2; 30 hours, 2019B.
2018 Hubble Space Telescope; 90 orbits, cycle 26 (LP).
2017 ESO/VLT; 250 hours, P101 (LP).
2018 JCMT/SCUBA-2; 16 hours, 2018A.
2017 ESO/VLT; 36 hours, P100.
2017 JCMT/SCUBA-2; 9 hours, 2017B.
2016 ESO/VLT; 18 hours, P99.
2016 Keck Telescope; 2 nights, 2016B.
2016 Hubble Space Telescope; 96 orbits, cycle 24 (LP).
2016 JCMT/SCUBA-2; 9 hours, 2016B.
2016 Keck Telescope; 1 night, 2016A.
2016 WHT; 12 nights, 2016A.
2016 ESO/VLT; 106 hours, P97-100 (LP).
2015 WHT; 9 nights, 2015B.
2015 ESO/VLT; 9 hours, P96.
2015 Hubble Space Telescope; 55 orbits, cycle 23.
2014 ESO/VLT; 28 hours, P95.
2014 ESO/VLT; 5 hours, P94.
2014 Gemini-S Telescope; 30 hours, 2014A.
2014 Magellan Telescope; 4 nights, 2014A.
2013 Magellan Telescope; 5 nights, 2013B.
2013 Keck Telescope; 1 night, 2013B.
2012 Keck Telescope; 1 night, 2013A.
2012 Magellan Telescope; 4 nights, 2013A.
2012 Magellan Telescope; 4 nights, 2012B.
2011 IRAM 30m Telescope; 64 hours, 2011B.

Teaching and Advising

2019- Astrophysics Laboratory; MSc at University of Milano-Bicocca.
2018-2019 Radiative processes in astrophysics; PhD lecture series at Durham University.
2018 The role of baryonic process in galaxy formation and evolution; PhD lecture series at University of Milano-Bicocca.
2016-2017 PHYS2651: Physics in Society, BSc at Durham University.
2014-2019 PHYS1081: Introduction to Astronomy, BSc at Durham University.
2014-2018 PHYS1101: Discovery Skills in Physics, BSc at Durham University.
2009 Ay2: Overview of the Universe, BSc at UCSC.

PhD Students Mr. Calvin Sykes (2017-), Durham University.

Ms. Louise Welsh (2017-), Durham University.
 Mr. Ruari Mackenzie (2014-2018), Durham University (PhD, 2018).
 Mr. Greg Ashworth (2014-2018), Durham University (PhD, 2018).

PDRAs Dr. Rajeshwari Dutta (2019-), Durham University.
 Dr. Matteo Fossati (2018-), Durham University, University of Milano-Bicocca.
 Dr. Emma Lofthouse (2018-), Durham University, University of Milano-Bicocca.
 Dr. Elisabeta Lusso (2017-2019), Junior Research Fellow, Durham University.
 Dr. Richard Bielby (2017-2019), Durham University.

Membership and Activities

2020 Chair of PhD Admission Committee, Physics Department, University of Milano-Bicocca
 2020- Panel Member, USA National Science Foundation
 2018- Peer reviewer, Nature
 2018- Peer reviewer, European Research Council
 2017- Peer reviewer, Nature Astronomy
 2016-2018 Member of Van Mildert College Council, Durham University
 2016- E-ELT HIRES Galaxy and IGM Working Group
 2012- Peer reviewer, Astrophysical Journal
 2012- Peer reviewer, Monthly Notices of the Royal Astronomical Society
 2012- Peer reviewer, Astronomy and Astrophysics
 2011-2012 Graduate Student Mentor, UCSC Astronomy & Astrophysics Department
 2011-2015 Member, European Physical Society
 2011-2012 Member, American Astronomical Society
 2008-2015 Member, Società Italiana di Fisica

Refereed publications

1. **Fumagalli, M.**, Fotopoulou, S., Thomson, L. 2020, MNRAS in press (arXiv:2009.03322). *Detecting neutral hydrogen at $z > 3$ in large spectroscopic surveys of quasars.*
2. Decataldo, D., Lupi, A., Ferrara, A., Pallottini, A., **Fumagalli, M.** 2020, MNRAS in press. *Shaping the structure of a GMC with radiation and winds.*
3. Stott, J.P. et al. 2020, MNRAS in press (arXiv:2006.07384). *Quasar Sightline and Galaxy Evolution (QSAGE) survey – II. Galaxy overdensities around UV luminous quasars at $z = 1 - 2$.*
4. Bielby, R., **Fumagalli, M.**, Fossati, M. et al. 2020, MNRAS in press (arXiv:2001.09058). *Into the Ly α jungle: exploring the circumgalactic medium of galaxies at $z \sim 4 - 5$ with MUSE.*
5. Cooke, R., Welsh, L., **Fumagalli, M.**, Pettini, M. 2020, MNRAS in press (arXiv:2001.06016). *A limit on Planck-scale froth with ESPRESSO.*
6. Welsh, L., Cooke, R., **Fumagalli, M.**, Pettini, M. 2020, MNRAS in press (arXiv:2001.04983). *A bound on the $12\text{C}/13\text{C}$ ratio in near-pristine gas with ESPRESSO.*

8. Della Bruna, L., Adamo, A., Bik A., **Fumagalli M.** et al. 2020, A&A, 635, 134. *Studying the ISM at 10 pc scale in NGC 7793 with MUSE – I. Data description and properties of the ionised gas.*
8. Buie, E., **Fumagalli, M.**, Scannapieco, E. 2020, 890, 33. *Interpreting Observations of Absorption Lines in the Circumgalactic Medium with a Turbulent Medium.*
9. Lofthouse, E.K., **Fumagalli, M.**, Fossati, M. et al. 2020, MNRAS, 491, 2057. *MUSE Analysis of Gas around Galaxies (MAGG) – I: Survey design and the environment of a near pristine gas cloud at $z \sim 3.5$.*
10. Sykes, C., **Fumagalli, M.**, Cooke, R., Theuns, T. 2020, MNRAS, 492, 2151. *Determining the primordial helium abundance and UV background using fluorescent emission in star-free dark matter haloes.*
11. Fossati, M., **Fumagalli, M.**, Lofthouse, E.K. et al. 2019, MNRAS, 490, 1451. *The MUSE Ultra Deep Field (MUDF). II. Survey design and the gaseous properties of galaxy groups at $0.5 < z < 1.5$.*
12. Umehata, H., **Fumagalli, M.**, Smail, I. et al. 2019, Science, 366, 97. *Gas filaments of the cosmic web located around active galaxies in a proto-cluster.*
13. Becker, G.D. et al. 2019, ApJ, 883, 163. *The Evolution of OI over $3.2 < z < 6.5$: Reionization of the Circumgalactic Medium.*
14. Jachym, P. et al. 2019, ApJ, 883, 145. *ALMA unveils widespread molecular gas clumps in the ram pressure stripped tail of the Norma jellyfish galaxy.*
15. **Fumagalli, M.** 2019, Nature Astronomy, 3, 796. *Thirsty galaxies thriving on gas streams.*
16. Sykes, C., **Fumagalli, M.**, Cooke, R., Theuns, T., Benitez-Llambay, A. 2019, MNRAS, 487, 609. *Fluorescent rings in star-free dark matter haloes.*
17. Mackenzie, R., **Fumagalli, M.**, Theuns, T. et al. 2019, MNRAS, 487, 5070. *Linking gas and galaxies at high redshift: MUSE surveys the environments of six damped Ly α galaxies at $z \sim 3$.*
18. Welsh, L., Cooke, R., **Fumagalli, M.** 2019, MNRAS, 487, 3363. *Modelling the chemical enrichment of Population III supernovae: The origin of the metals in near-pristine gas clouds.*
19. Bielby, R.M. et al. 2019, MNRAS, 486, 21. *Quasar Sightline and Galaxy Evolution (QSAGE) Survey - I. The Galaxy Environment of OVI Absorbers up to $z = 1.4$ around PKS 0232-04.*
20. Lusso, E., **Fumagalli, M.**, Fossati, M., et al. 2019, MNRAS, 485, 62. *The MUSE Ultra Deep Field (MUDF). I. Discovery of a group of Ly α nebulae associated with a bright $z \approx 3.23$ quasar pair.*
21. Furniss, A., Worseck, G., **Fumagalli, M.** et al. 2019, AJ, 157, 41. *Spectroscopic Redshift of the Gamma-Ray Blazar B2 1215+30 from Ly α Emission.*
22. Cook, D.O. et al. 2019, MNRAS, 484, 4897. *Star Cluster Catalogs for the LEGUS Dwarf Galaxies.*
23. Fossati, M., **Fumagalli, M.**, Gavazzi, G. et al. 2019, MNRAS, 484, 2212. *MUSE sneaks a peek at extreme ram-pressure stripping events - IV. Hydrodynamic and gravitational interactions in the Blue Infalling Group.*
24. Grasha, K. et al. 2019, 483, 4707. *The Spatial Relation between Young Star Clusters and Molecular Clouds in M 51 with LEGUS.*

25. P. Frédéric Robert et al. 2019, MNRAS, 483, 2736. *Exploring the origins of a new, apparently metal-free gas cloud at $z = 4.4$.*
26. Jauzac, M. et al. 2019, MNRAS, 483, 3082. *The core of the massive cluster merger MACS J0417.5-1154 as seen by VLT/MUSE.*
27. Arrigoni Battaia, F., Chen, C.-C., **Fumagalli, M.** et al. 2018, A&A, 620, 202. *Over-density of submillimeter galaxies around the $z=2.3$ MAMMOTH-1 nebula.*
28. Boselli, A. et al. 2018, A&A, 620, 164. *A Virgo Environmental Survey Tracing Ionised Gas Emission (VESTIGE).IV. A tail of Ionised Gas in the Merger Remnant NGC 4424.*
29. Krumholz, M. R., Adamo, A., **Fumagalli, M.**, Calzetti, D. 2019, MNRAS, 482, 3550. *SLUG IV: A Novel Forward-Modelling Method to Derive the Demographics of Star Clusters.*
30. Caruso, D., Haardt, F., **Fumagalli, M.**, Cantalupo, S. 2019, MNRAS, 482, 2833. *MCMC determination of the cosmic UV background at $z \approx 0$ from $H\alpha$ fluorescence.*
31. Cooke, R. & **Fumagalli, M.** 2018, Nature Astronomy, 2, 957. *Measurement of the primordial helium abundance from the intergalactic medium.*
32. Krogager, J.-K. et al. 2018, A&A, 619, 142. *Dissecting cold gas in a high-redshift galaxy using a lensed background quasar.*
33. Grasha, K. et al. 2018, MNRAS, 481, 1016. *Connecting Young Star Clusters to CO Molecular Gas in NGC 7793 with ALMA-LEGUS.*
34. Ashworth, G., **Fumagalli, M.**, Adamo, A., Krumholz, M.R. 2018, MNRAS, 480, 3091A. *Theoretical predictions for IMF diagnostics in UV spectroscopy of star clusters.*
35. Hunter, D. et al. 2018, AJ, 156, 21. *A comparison of young star properties with local galactic environment for LEGUS/LITTLE THINGS dwarf irregular galaxies.*
36. Boselli, A. et al. 2018, A&A, 615, 114. *A Virgo Environmental Survey Tracing Ionised Gas Emission (VESTIGE).III. Star formation in the stripped gas of NGC 4254.*
37. Chehade, B. et al. 2018, MNRAS, 478, 1649. *Two more, bright, $z > 6$ quasars from VST ATLAS and WISE .*
38. Boselli, A. et al. 2018, A&A, 614, 56. *A Virgo Environmental Survey Tracing Ionised Gas Emission (VESTIGE).I. Introduction to the Survey.*
39. Fossati, M. et al. 2018, A&A, 614, 57. *A Virgo Environmental Survey Tracing Ionised Gas Emission (VESTIGE). III. Constraining the quenching time in the stripped galaxy NGC 4330.*
40. Lusso, E., **Fumagalli, M.**, Rafelski, M. et al. 2018, ApJ, 860, 41. *The spectral and environment properties of $z \sim 2.0 - 2.5$ quasar pairs.*
41. Findlay, J.R. et al. 2018, ApJS, 236, 44. *Quasars probing quasars X: The quasar pair spectral database.*
42. Messa, M. et al. 2018, MNRAS, 477, 1683. *The Young Star Cluster population of M51 with LEGUS: II. Testing environmental dependencies.*
43. Kahre, L. et al. 2018, ApJ, 855, 133. *Extinction Maps and Dust-to-Gas Ratios in Nearby Galaxies.*
44. Gavazzi, G., Consolandi, G., Pedraglio, S., Fossati, M., **Fumagalli, M.**, Boselli, A. 2018, A&A, 611, 28. *$H\alpha$ imaging observations of early-type galaxies from the ATLAS3D survey.*
45. Hunter, D. et al. 2018, ApJ, 855, 7. *A study of two dwarf irregular galaxies with asymmetrical star formation distributions.*

46. Sabbi, E. et al. 2018, ApJS, 235, 23. *The resolved stellar populations in the LEGUS galaxies.*
47. Messa, M. et al. 2018, MNRAS, 473, 996. *The Young Star Cluster population of M51 with LEGUS: I. A comprehensive study of cluster formation and evolution.*
48. Consolandi, G., Gavazzi, G., Fossati, M., **Fumagalli, M.**, Boselli, A., Yagi, M., Yoshida, M. et al. 2017, A&A, 606, 83. *MUSE sneaks a peek at extreme ram-pressure events - III. Tomography of UGC 6697, a massive galaxy falling into Abell 1367.*
49. **Fumagalli, M.**, Mackenzie, R., Trayford, J. et al. 2017, MNRAS, 471, 3686. *Witnessing galaxy assembly in an extended $z \approx 3$ structure.*
50. Grasha, K. et al. 2017, ApJ, 842, 25. *Hierarchical Star Formation in Turbulent Media: Evidence from Young Star Clusters.*
51. Ashworth, G., **Fumagalli, M.**, Krumholz, M.R. et al. 2017, MNRAS, 469, 2464. *Exploring the IMF of star clusters: a joint SLUG and LEGUS effort.*
52. Ryon, J.E. et al. 2017, ApJ, 841, 92. *Effective Radii of Young, Massive Star Clusters in Two LEGUS Galaxies.*
53. Adamo, A. et al. 2017, ApJ, 841, 131. *Legacy ExtraGalactic UV Survey with The Hubble Space Telescope. Stellar cluster catalogues and first insights into cluster formation and evolution in NGC 628.*
54. Grasha, K. et al. 2017, ApJ, 840, 113. *The Hierarchical Distribution of the Young Stellar Clusters in Six Local Star Forming Galaxies.*
55. Bielby, R., Crighton, N.H.M, **Fumagalli, M.** et al. 2017, MNRAS, 468, 1373. *Probing the intra-group medium of a $z = 0.28$ galaxy group.*
56. Swinbank, M. et al. 2017, MNRAS, 467, 3140. *Angular momentum evolution of galaxies over the past 10 Gyr: A MUSE and KMOS dynamical survey of 400 star-forming galaxies from $z = 0.3 - 1.7$.*
57. **Fumagalli, M.**, Haardt, F., Theuns, T., Morris, S.L., Cantalupo, S., Madau, P., Fossati, M. 2017, MNRAS, 467, 4802. *A measurement of the $z = 0$ UV background from H α fluorescence.*
58. Prochaska et al. 2017, ApJ, 837, 169. *The COS-Halos Survey: Metallicities in the Low-Redshift Circumgalactic Medium.*
59. Lehner, N., O'Meara, J.M., Howk, J.C., Prochaska, J.X., **Fumagalli, M.** 2016, ApJ, 833, 283. *The Cosmic Evolution of the Metallicity Distribution of Ionized Gas Traced by Lyman Limit Systems.*
60. Toy, V.L. et al. 2016, ApJ, 832, 175. *Exploring Damped Lyman- α System Host Galaxies using Gamma-ray Bursts.*
61. **Fumagalli, M.**, Cantalupo, S., Dekel, A., Morris, S.L., O'Meara, J.M, Prochaska, J.X., Theuns, T. 2016, MNRAS, 462, 1978. *MUSE searches for galaxies near very metal-poor gas clouds at $z \sim 3$: new constraints for cold accretion models.*
62. Rafelski, M., Gardner, J.P., **Fumagalli, M.** et al. 2016, ApJ, 825, 87. *The Star Formation Rate Efficiency of Neutral Atomic-dominated Hydrogen Gas in the Outskirts of Star Forming Galaxies from $z \sim 1$ to $z \sim 3$.*
63. Consolandi, G., Gavazzi, G., **Fumagalli, M.** et al. 2016, A&A, 591, 38. *Robust automatic photometry of local galaxies from SDSS. Dissecting the color magnitude relation with color profiles.*
64. Finn, C. et al. 2016, MNRAS, 460, 590. *On the connection between the metal-enriched intergalactic medium and galaxies: an OVI-galaxy cross-correlation study at $z < 1$.*

65. Archambault, S. et al. 2016, AJ, 151, 142. *Upper limits from five years of blazar observations with the VERITAS Cherenkov telescopes.*
66. Boselli, A. et al. 2016, A&A, 587, 68. *Spectacular tails of ionised gas in the Virgo cluster galaxy NGC 4569*
67. Grasha, K. et al. 2015, ApJ, 815, 93. *The Spatial Distribution of the Young Stellar Clusters in the Star Forming Galaxy NGC 628.*
68. **Fumagalli, M.**, O'Meara, J.M., Prochaska, J.X. 2016, MNRAS, 455, 4100. *The physical properties of $z > 2$ Lyman limit systems: new constraints for feedback and accretion models.*
69. Fossati, M., **Fumagalli, M.**, Boselli, A. et al. 2016, MNRAS, 455, 2028. *MUSE sneaks a peek at extreme ram-pressure stripping events. II. The physical properties of the gas tail of ESO137-001.*
70. Farina, E., **Fumagalli, M.**, Decarli, R. et al. 2016, MNRAS, 455, 618. *The Cluster-Scale Environment of PKS 2155-304.*
71. Krumholz, M. R., Adamo, A., **Fumagalli, M.**, et al. 2015, ApJ, 812, 147. *Star Cluster Properties in Two LEGUS Galaxies Computed with Stochastic Stellar Population Synthesis Models.*
72. Calzetti, D. et al. 2015, ApJ, 811, 75. *The Brightest Young Star Clusters in NGC 5253.*
73. Prochaska, J.X. et al. 2015, ApJS, 221, 2. *The Keck+Magellan Survey for Lyman Limit Absorption III: Sample Definition and Column Density Measurements.*
74. Crighton, N. et al. 2015, MNRAS, 452, 217. *The Neutral Hydrogen Cosmological Mass Density at $z = 5$.*
75. Krumholz, M., **Fumagalli, M.**, da Silva, R., Rendahl, T., Parra, J. 2015, MNRAS, 452, 1447. *SLUG – Stochastically Lighting Up Galaxies. III: A Suite of Tools for Simulated Photometry, Spectroscopy, and Bayesian Inference with Stochastic Stellar Populations.*
76. Gavazzi, G. et al. 2015, A&A, 580, 116. *Halpa3: an Halpa imaging survey of HI selected galaxies from ALFALFA . VI. The role of bars in quenching star formation from $z = 3$ to the present epoch.*
77. Carnall, A. C. et al. 2015, MNRAS, 451, 16. *Two bright $z > 6$ quasars from VST ATLAS and a new method of optical plus mid-infra-red colour selection.*
78. Cucchiara, A., **Fumagalli, M.**, Rafelski, M., Kocevski, D., Prochaska, J.X., Cooke, R.J., Becker, G.D. 2015, ApJ, 804, 51. *Unveiling the Secrets of Metallicity and Massive Star Formation Using DLAs along Gamma-ray Bursts.*
79. Gavazzi, G. et al. 2015, A&A, 576, 16. *Halpa3: an Halpa imaging survey of HI selected galaxies from ALFALFA . V. The Coma supercluster survey completion.*
80. Calzetti, D. et al. 2015, AJ, 149, 51. *Legacy ExtraGalactic UV Survey (LEGUS) with The Hubble Space Telescope. I. Survey Description.*
81. **Fumagalli, M.**, O'Meara, J.M., Prochaska, J.X., Rafelski, M., Kanekar, N. 2015, MNRAS, 446, 3178. *Directly imaging damped Ly α galaxies at $z > 2$. III: The star formation rates of neutral gas reservoirs at $z \sim 2.7$.*
82. Crighton, N. et al. 2015, MNRAS, 446, 18. *Metal-enriched, sub-kiloparsec gas clumps in the circumgalactic medium of a faint $z = 2.5$ galaxy.*

83. **Fumagalli, M.**, Fossati, M., Hau, G. et al. 2014, MNRAS, 445, 4335. *MUSE sneaks a peek at extreme ram-pressure stripping events. I. A kinematic study of the archetypal galaxy ESO137-001.*
84. Aliu, E. et al. 2014, ApJ, 797, 89. *Investigating Broadband Variability of the TeV Blazar 1ES 1959+650.*
85. Boselli, A. et al. 2014, A&A, 570, 69. *The GALEX Ultraviolet Virgo Cluster Survey (GUViCS). IV: The role of the cluster environment on galaxy evolution*
86. Worseck, G. et al. 2014, MNRAS, 445, 1745. *The Giant Gemini GMOS survey of $z > 4.4$ quasars. I: Measuring the mean free path across cosmic time.*
87. da Silva, R.L., **Fumagalli, M.**, Krumholz, M. 2014, MNRAS, 444, 3275. *SLUG - Stochastically Lighting Up Galaxies. II: Quantifying the Effects of Stochasticity on Star Formation Rate Indicators.*
88. **Fumagalli, M.**, O'Meara, J.M., Prochaska, J.X., Kanekar, N., Wolfe, A. 2014, MNRAS, 444, 1282. *Directly imaging damped Ly α galaxies at $z > 2$. II: Imaging and spectroscopic observations of 32 quasar fields.*
89. Lusso, E. et al. 2014, MNRAS, 441, 316. *The nature of massive black hole binary candidates: II. Spectral energy distribution atlas.*
90. Finn, C. et al. 2014, MNRAS, 440, 3317. *A compact, metal-rich, kpc-scale outflow in FBQS J0209-0438: Detailed diagnostics from HST/COS extreme UV observations.*
91. da Silva, R.L., Krumholz, M., **Fumagalli, M.**, Fall, M. 2014, MNRAS, 438, 2355. *An Analytic Method to Compute Star Cluster Luminosity Statistics.*
92. Wright, E. et al., 2014, AJ, 147, 61. *The First AllWISE Proper Motion Discovery: WISEA J070720.50+170532.7.*
93. Rafelski, M., Neeleman, M., **Fumagalli, M.**, Wolfe, A.M., Prochaska, J.X. 2014, ApJL, 782, 29. *The Rapid Decline in Metallicity of Damped Ly- α Systems at $z \sim 5$.*
94. Prochaska, J.X., Madau, P., O'Meara, J.M., **Fumagalli, M.** 2014, MNRAS, 438, 476. *Towards a Unified Description of the Intergalactic Medium at Redshift $z \sim 2.5$.*
95. **Fumagalli, M.**, Hennawi, J., Prochaska, J.X., Kasen, D., Dekel, A., Ceverino, D., Primack, J. 2014, ApJ, 780, 74. *Confronting Simulations of Optically Thick Gas in Massive Halos with Observations at $z = 2 - 3$.*
96. VERITAS collaboration et al., 2013, ApJ, 779, 92. *Long term observations of B2 1215+30 with VERITAS.*
97. **Fumagalli, M.**, O'Meara, J.M., Prochaska, J.X., Worseck, G. 2013, ApJ, 775, 78. *Dissecting the properties of optically-thick hydrogen at the peak of cosmic star formation history.*
98. Decarli, R., Dotti, M., **Fumagalli, M.**, et al. 2013, MNRAS, 433, 1492. *The nature of massive black hole binary candidates: I. Spectral properties and evolution.*
99. Furniss, A., **Fumagalli, M.**, Falcone, A., Williams, D. A. 2013, ApJ, 770, 109. *The Blazar Emission Environment: Insight from Soft X-ray Absorption.*
100. Furniss, A. et al. 2013, ApJ, 768, L31. *The Firm Redshift Lower Limit of the Most Distant TeV-Detected Blazar PKS 1424+240.*
101. Fossati, M. et al. 2013, A&A, 553, 91. *Halp3: an Halp3 imaging survey of HI selected galaxies from ALFALFA. IV. The structure of galaxies in the Local and Coma Superclusters.*

102. Gavazzi, G. et al. 2013, A&A, 553, 90. *Halpa3: an Halpa imaging survey of HI selected galaxies from ALFALFA. III. Nurture shapes up the Hubble sequence in the Great Wall.*
103. Gavazzi, G., **Fumagalli, M.**, Fossati, M. et al. 2013, A&A, 553, 89. *Halpa3: an Halpa imaging survey of HI selected galaxies from ALFALFA. II. The star formation properties of galaxies in the Virgo cluster and surroundings.*
104. Furniss, A., **Fumagalli, M.**, Danforth, C., Williams, D., & Prochaska, X. 2013, ApJ, 766, 35. *On the Redshift of the Very High Energy Blazar 3C66A.*
105. Farina, E., Montuori, C., Decarli, R., **Fumagalli, M.** 2013, MNRAS, 431, 1019. *Caught in the Act: Discovery of a Physical Quasar Triplet.*
106. Aliu, E. et. al 2012, ApJ, 759, 102. *VERITAS Observations of Six Bright, Hard-Spectrum Fermi-LAT Blazars.*
107. **Fumagalli, M.**, Furniss, A., O'Meara, J., Prochaska, X., Williams, D., Farina, E. 2012, A&A, 545, 68. *On the redshift of the blazar PKS0447-439.*
108. Fossati, M., Gavazzi, G., Boselli, A., **Fumagalli, M.** 2012, A&A, 544, A128. *65 kpc of ionized gas trailing behind NGC 4848 during its first crossing of the Coma cluster.*
109. Gavazzi, G., **Fumagalli, M.**, Galardo, V., et al. 2012, A&A, 545, 16. *H α ³: H α imaging survey of HI selected galaxies from ALFALFA. I. Catalogue in the local supercluster.*
110. **Fumagalli, M.**, Dessauges-Zavadsky, M., Furniss, A., et al. 2012, MNRAS, 424, 2276. *A search of CO emission lines in blazars: the low molecular gas content of BL Lac objects compared to quasars.*
111. Arrigoni Battaia, F. et al. 2012, A&A, 543 A112. *Stripped gas as fuel for newly formed HII regions in the encounter between VCC1249 and M49: a unified picture from NGVS and GUViCS.*
112. da Silva, R.L., **Fumagalli, M.**, & Krumholz, M. 2012, ApJ, 745, 145. *SLUG - Stochastically Lighting Up Galaxies I: Methods and Validating Tests.*
113. **Fumagalli, M.**, O'Meara, J.M., & Prochaska, J.X. 2011, Science, 334, 1245. *Detection of pristine gas two billion years after the Big Bang.*
114. Barth, A. et al. 2011, ApJ, 743, L4. *The Lick AGN monitoring project 2011: reverberation mapping of Markarian 50.*
115. **Fumagalli, M.**, da Silva, R.L., & Krumholz, M. 2011, ApJ, 741, L26. *Stochastic star formation and a (nearly) uniform stellar initial mass function.*
116. Aliu, E. et al. 2011, ApJ, 742, 127. *Multiwavelength Observations of the Previously Unidentified Blazar RX J0648.7+1516.*
117. Cucchiara, A. et al. 2011, ApJ, 743, 154. *Constraining GRB Emission Physics with Extensive Early-Time, Multiband Follow-up.*
118. **Fumagalli, M.**, Prochaska, J.X., Kasen, D., Dekel, A., Ceverino, D., & Primack, J.R. 2011, MNRAS, 418, 1796. *Absorption line systems in simulated galaxies fed by cold streams.*
119. Barth, A. et al. 2011, ApJ, 732, 121. *Broad-line Reverberation in the Kepler-field Seyfert Galaxy Zw 229-015.*
120. Abdo, A.A. et al. 2011, ApJ, 726, 43. *Multi-wavelength Observations of the Flaring Gamma-ray Blazar 3C 66A in 2008 October.*

121. **Fumagalli, M.**, O'Meara, J.M., Prochaska, J.X., & Kanekar, N. 2010, MNRAS, 408, 362. *Directly imaging damped Lyman- α galaxies at $z > 2$ - I. Methodology and first results.*
122. **Fumagalli, M.**, Krumholz, M.R., & Hunt, L.K. 2010, ApJ, 722, 919. *Testing models for molecular gas formation in galaxies: hydrostatic pressure or gas and dust shielding?*
123. **Fumagalli, M.**, Krumholz, M.R., Prochaska, J.X., Gavazzi, G., & Boselli, A. 2009, ApJ, 697, 1811 *Molecular hydrogen deficiency in HI-poor galaxies and its implications for star formation.*
124. **Fumagalli, M.**, & Gavazzi, G. 2008, A&A, 490, 571. *The relationship between gas content and star formation rate in spiral galaxies. Comparing the local field with the Virgo cluster.*
125. Gavazzi, G. et al. 2008, A&A, 482, 43. *HI content and other structural properties of galaxies in the Virgo cluster from the Arecibo Legacy Fast ALFA Survey.*

Non-refereed publications

1. Richard, J. et al. 2019, arXiv:1906.01657. *BlueMUSE: Project Overview and Science Cases.*
2. DESI collaboration 2016, arXiv:1611.00037. *The DESI Experiment Part II: Instrument Design.*
3. DESI collaboration 2016, arXiv:1611.00036. *The DESI Experiment Part I: Science, Targeting, and Survey Design.*
4. Pieri, M. et al. 2016, Proceedings of the SF2A conference, Lyon, 2016. *WEAVE-QSO: A Massive Intergalactic Medium Survey for the William Herschel Telescope.*
5. **Fumagalli, M.** 2014, MmSAI, 85, 355. *Metal abundances in the high-redshift intergalactic medium.*
6. **Fumagalli, M.** 2012, Ph.D. dissertation, University of California, Santa Cruz. *Food for stars: the role of hydrogen in the formation and evolution of galaxies.*
7. **Fumagalli, M.**, da Silva, R., Krumholz, M., & Bigiel, F. 2011, Astronomical Society of the Pacific Conference Series, 440, 155. *SLUG: A New Way to Stochastically Light Up Galaxies.*
8. **Fumagalli, M.** 2008, MSc thesis, Università Milano-Bicocca. *High resolution multifrequency analysis of gas behavior and star formation in spiral galaxies.*
9. **Fumagalli, M.** 2006, BSc thesis, Università Milano-Bicocca. *Impact of low frequencies measurements on the knowledge of spectral distortions expected for Cosmic Microwave Background Radiation.*

Bruno Giacomazzo

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Research Interests

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

Positions

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

Education

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

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

- collaborator (PI Manuela Campanelli), NASA Grant No. 17-TCAN17-0018 (3 years, ~ **\$1,600,000**, 2018-2021)
- PI, 3 million core hours CINECA computer time grant IscrB_HM-BNS, 2017-2018
- PI, 33.4 million core hours PRACE computer time grant 2016153613 “Magneto - Effect of Magnetar Level Fields in Binary Neutron Star Mergers”, 2017-2018
- collaborator (PI Davide Lazzati), NASA Grant No. 16-ATP16-0033 (3 years, **\$440000**, 2017-2020)
- collaborator (PI Rosalba Perna), NSF Grant No. AST-1616157 (3 years, **\$405000**, 2016-2019)
- co-I (PI Troja), ATCA (Australia Telescope Compact Array) observational grant no. C3059, 2015-2016
- PI, 0.2 million core hours CINECA computer time grant IsC34_HMBNS, 2015-2016
- PI, ~ 16 million core hours PRACE computer time grant “GRSimStar - General Relativistic Simulations of binary neutron Star mergers”, 2015-2016
- PI, 1 million core hours CINECA computer time grant IsC24_GRMHDNS, 2014-2015
- co-PI (PI Zachariah Etienne), 1 million core hours NSF XSEDE computer time grant TG-AST140068, 2014-2015
- PI, MIUR FIR Grant No. RBFR13QJYF (3 years, **EUR 313000**, 2014-2017)
- collaborator (PI John Baker), NASA Grant No. 13-ATP13-0077 (3 years, **\$440000**, 2014-2017)
- PI, 4 million core hours NSF XSEDE computer time grant TG-PHY110027, 2013-2014
- PI, NASA Grant No. NNX12AO67G (1 year, **\$80000**, 2012-2013)
- PI, 8 million core hours NSF XSEDE computer time grant TG-PHY110027, 2012-2013
- PI, 6.4 million core hours NSF Teragrid computer time grant TG-PHY110027, 2011-2012
- co-I (PI Sean McWilliams), 1.5 million core hours NSF Teragrid computer time grant TG-AST100027, 2010-2011
- co-PI (PI Erik Schnetter), 21.2 million core hours NSF Teragrid computer time grant TG-MCA02N014, 2010

Teaching Experience

- University of Milano-Bicocca (2019 - Present)
 - 2019 - Present: “Elementi di Astrofisica” (48 hour course for Bachelor students on “Introduction to Astrophysics”)
 - 2020 - Present: “Astrofisica Applicata” (42 hour course for M.Sc. students on “Applied Astrophysics”)
 - 2019: “Laboratorio di Astrofisica” (30 hour course for M.Sc. students on “Laboratory for Astrophysics”)
- University of Trento (2013 - 2019)
 - 2016 - 2019: “Fisica Generale III (Physics III)” (84 hour course for Bachelor students)
 - 2014 - 2019: “High Energy Astrophysics” (48 hour course for M.Sc. students)
 - 2013 - 2014: “Computational Physics (Advanced)” (12 hour course for M.Sc. students)
- International Schools
 - September 2 - 6 2019: 2 hour lecture on “Introduction to numerical methods for general relativistic magnetohydrodynamics” at the European Einstein Toolkit Workshop 2019, London, UK
 - December 5 2018: 3 hour lecture and tutorial on the Einstein Toolkit at the PRACE school on “HPC methods for Computational Fluid Dynamics and Astrophysics”, Rome, Italy
 - September 10 - 13 2018: 2 hour lecture on “Introduction to numerical methods for general relativistic magnetohydrodynamics” at the European Einstein Toolkit Workshop 2018, Lisbon, Portugal
 - November 15 2017: 1 hour lecture on “Einstein Toolkit” at the PRACE school “HPC Methods for CFD and Astrophysics”, CINECA, Bologna, Italy
 - July 4 - 8 2016: 10 hour lectures on “Neutron Star Mergers and Gravitational Waves” given at the 2016 ECT* Doctoral Training Programme
 - May 6 2008: 2 hour lecture on “Gravitational Collapse” given at the 3rd VESF School on Gravitational Waves, Cascina (Pisa), Italy
 - March 18 2008: 45 minute lecture on “Numerical Relativity at AEI: Simulating Single and Binary Neutron Stars” given at the *Ferienkurs in Gravitationsphysik 2008* (Semester break courses on Gravitational Physics) at AEI, Potsdam, Germany

Students and Postdocs Mentored (35 undergraduates, 7 graduates, 3 postdocs)

- University of Milano-Bicocca (2019-Present)
 - master students: Lorenzo Sala, Federico Cattorini, Giulia Crotti
 - bachelor students: Luca Ambrosini, Manuel Piarulli, Alice Gambaro
- University of Trento (2013-2019)
 - Postdocs: Riccardo Ciolfi, Wolfgang Kastaun, Federico Cipolletta

- PhD students: Takumu Kawamura, Andrea Endrizzi
- master students: Andrea Endrizzi, Francesco Maria Fabbri, Daniele Scappini (in collaboration with Röchling Automotive)
- bachelor students: Elisa Ritondale, Francesco Gramendola, Luigi Bassini, Lumen Boco, Lorenzo Zandonella Dall’Aquila, Giulio Isacchini, Riccardo La Placa, Federico Zangrandi, Simone Veronese, Uisem El Haddadi, Christian Dioguardi, Luca Silvio Perli, Filippo Santoliquido, Giacomo Ricigliano, Alberto Chimenti, Riccardo Cominotti, Daniele Franch, Lorenzo Speri, Eva Casotti, Leonardo Chiesa, Nicola Pedron, Dennis Verra, Chiara Avigo, Silvia Ferro, Luca Zuanazzi
- JILA, University of Colorado (2011-2013)
 - undergraduate students: John Mark Demopoulos
- University of Maryland and NASA GSFC (2009-2011):
 - graduate students: John Capone (2010 summer internship at NASA Goddard Space Flight Center)
 - undergraduate students: Philip Cowperthwaite (2011 summer internship at NASA Goddard Space Flight Center)
- Albert Einstein Institute (2006-2009):
 - graduate students: Kyriaki Dionysopoulou (advisor L. Rezzolla), Filippo Galeazzi (advisor L. Rezzolla), Aaryn Tonita (advisor L. Rezzolla), Thorsten Kellermann (2011, advisor L. Rezzolla)
 - undergraduate students: David Link (2009, advisor L. Rezzolla), Filippo Galeazzi (2008, advisor L. Rezzolla)

Refereeing Activities

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

Proposal Reviewer for: CINECA (2018, 2019), FNRS (2020), ISF (2016), NASA (2013, 2017), NSERC (2014), NSF (2013, 2015, 2017, 2018), PRACE (2018), LinkSCEEM/Cy-Tera (2014)

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

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

Administrative Duties

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

Conference Organization

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

Awards and Societies

July 2018 - Present	Member of the LISA Consortium
April 2017 - Present	Member of the LIGO-Virgo Collaboration
September 1 2015 - Present:	Member of the Italian Physical Society
October 1 2009 - Present:	Member of the American Physical Society
May 10 2019	Awarded the Italian National Scientific Qualification (Abilitazione Scientifica Nazionale) to become a full professor in theoretical physics (02/A2)
March 28 2017	Awarded the Italian National Scientific Qualification (Abilitazione Scientifica Nazionale) to become a full professor in astronomy and astrophysics (02/C1)
January 8 2014	Awarded the Italian National Scientific Qualification (Abilitazione Scientifica Nazionale) to become an associate professor in theoretical physics (02/A2)

Invited Seminars and Talks (43 in total, only most recent ones listed)

- August 3-7 2020: Workshop “(VIRTUAL) North American Einstein Toolkit Workshop 2020” (CCT, LSU, USA)
- **invited talk** on “The Spritz Code”
- June 17-19 2019: Workshop “North American Einstein Toolkit workshop 2019” (RIT, Rochester, NY, USA)
- **invited talk** on “Binary Neutron Star Mergers with WhiskyMHD”
- June 14 2019: Workshop “3rd FLAG Meeting: the Quantum and Gravity” (Catania, Italy)
- **invited review talk** on “Binary Neutron Star Mergers: Numerical Simulations and Observations”
- February 25-26 2019: Workshop “GWEOS-2019” (Pisa, Italy)
- **invited talk** on “BNS mergers with modern microscopic nuclear EOS”
- July 19 2018: Workshop on “GR effects in cosmological large-scale structure” (Sexten, Italy)
- **invited review talk** on “Numerical Relativity Simulations of Gravitational-Wave Sources”
- June 25 2018: Ψ 2 Workshop on “GAMMA-RAY BURSTS AND SUPER-NOVAE: FROM THE CENTRAL ENGINES TO THE OBSERVER” (Orsay, France)
- **invited review talk** on “Review on Numerical Simulations of Binary Neutron Star Mergers”
- June 11 - 13 2018: MODE Workshop on “Neutron stars and their environments” (Montpellier, France)
- **invited talk** on “Numerical Simulations of Binary Neutron Star Mergers: Gravitational Waves and Short Gamma-Ray Bursts”
- December 5 2017: **invited seminar** at the Theoretisch Physikalisches Institut of the Friedrich Schiller Universitat (Jena, Germany) on “Simulating Binary Neutron Star Mergers in the Multi-Messenger Era”
- November 30 2017: **invited seminar** at the Physics Department of the University of Pisa (Italy) on “Simulating Binary Neutron Star Mergers in the Multi-Messenger Era”
- November 20 - 22 2017: “The Astrophysics of NS Mergers” (Center for Computational Astrophysics, Flatiron Institute, New York, NY, USA)
- **invited talk** on “GRMHD simulations of binary NS mergers and possible future directions”
- June 30 2017: “European Physical Society 44TH CONFERENCE ON PLASMA PHYSICS” (Belfast, Northern Ireland)
- **invited plenary talk** on “General Relativistic Magneto-HydroDynamic Simulations: a Review and Status Report”

- June 26 2017: “European Week of Astronomy and Space Science” (Prague, Czech Republic)
- **invited review talk** on “Merging Neutron Stars as Tools for Fundamental Physics”
- January 25 2017: **invited seminar** at Stony Brook University (Stony Brook, NY, USA) on “Magnetic Field Effects in Merging Binary Neutron Stars”
- November 8 - 11 2016: “IV National Congress on GRBs” (Bergamo, Italy)
- **invited review talk** on “General Relativistic Simulations of Gamma-Ray Burst Engines”
- September 9 2016: international workshop “SHORT GAMMA-RAY BURSTS: From observation to numerical simulations” (Trento, Italy)
- **invited review talk** on “General Relativistic Simulations of Neutron Star Binaries and Short Gamma-Ray Bursts”
- June 4 2015: **invited seminar** at CENTRA (Instituto Superior Tecnico, Lisbon, Portugal) on “General Relativistic Simulations of Binary Neutron Star Mergers”
- November 25 2014: **invited seminar** at University of Parma (Parma, Italy) on “General Relativistic Simulations of Binary Neutron Star Mergers: Gravitational Waves and Short Gamma-Ray Bursts”
- November 14 2014: **invited seminar** at Institut für Theoretische Physik, Johann Wolfgang Goethe-Universitaet (Frankfurt, Germany) on “Investigating the Progenitors of Short Gamma-Ray Bursts via General Relativistic Simulations of Neutron Star Mergers”
- November 11 2014: **invited seminar** at Technische Universitaet Darmstadt (Darmstadt, Germany) on “General Relativistic Simulations of Binary Neutron Star Mergers: Gravitational Waves and Short Gamma-Ray Bursts”
- September 15 - 19 2014: Conference “XXI SIGRAV Conference on General Relativity and Gravitational Physics” (Alessandria, Italy)
- **invited talk** on “General Relativistic Simulations of Binary Neutron Stars: Gravitational Waves and Gamma-Ray Bursts”
- August 27 2014: **invited seminar** at Stony Brook University (Stony Brook, NY, USA) on “General Relativistic Simulations of Binary Neutron Star Mergers: Gravitational Waves and Short Gamma-Ray Bursts”
- July 14 - 18 2014: International Workshop “Astro-GR/VESF-School” (Rome, Italy)
- **invited review talk** on “General Relativistic Simulations of Neutron Star Binaries”
- June 23 2014: **invited seminar** at the Institute of Astrophysics (Paris, France) on “General Relativistic Magnetohydrodynamic Simulations of Binary Neutron Star Mergers”
- April 22 - 25 2014: International Conference “Sant Cugat Forum on Astrophysics: Gravitational Waves Astrophysics” (Sant Cugat, Spain)
- **invited review talk** on “Simulations of NS-NS mergers: gravitational waves and electromagnetic signals”

- September 23 - 27 2013: International Conference “MICRA 2013” (ECT*, Trento, Italy)
 - **invited review talk** on “General Relativistic Simulations of NS-NS and NS-BH mergers”
- May 13 - 17 2013: International Conference “FOE Fifty-One Erg” (NCSU, Raleigh, NC, USA)
 - **invited talk** on “General Relativistic Simulations of Compact Binary Mergers”
- April 13 - 16 2013: April Meeting of the American Physical Society (Denver, CO, USA)
 - **invited talk** on “General Relativistic Magnetohydrodynamic Simulations of Compact Binary Mergers”
- June 4 - 8 2012: International Conference “CompStar: the physics and astrophysics of compact stars” (Tahiti, French Polynesia)
 - **invited talk** on “Magnetized binary neutron star mergers”
- May 11 2012: JSI Mini-Symposium on “Electromagnetic Counterparts to Gravitational Wave Sources”, NASA Goddard Space Flight Center (Greenbelt, MD, USA)
 - **invited talk** on “GRMHD Simulations Of Binary Neutron Stars and Binary Black Holes”
- March 12 2012: **invited seminar** at CITA (Toronto, Canada) on “General Relativistic Magnetohydrodynamic Simulations of Neutron Stars and Black Holes”
- September 7 - 9 2011: “Parma Workshop on Numerical Relativity and Gravitational Waves 2011”, University of Parma, Italy
 - **invited talk** on “Magnetized Binary Neutron Star Mergers”
- June 13 - 17 2011: International Conference “Astronum 2011”, Valencia, Spain
 - **invited talk** on “Magnetized Binary Neutron Star Mergers”
- October 15 2010: **invited seminar** at JILA, University of Colorado (Boulder, Colorado, USA) on “General Relativistic Simulations of Binary Neutron Star Mergers”
- February 26 2010: **invited seminar** at Canadian Institute for Theoretical Astrophysics (Toronto, Canada) on “General Relativistic Simulations of Binary Neutron Star Mergers”
- February 25 2010: **invited seminar** at Perimeter Institute (Waterloo, Canada) on “General Relativistic Simulations of Single and Binary Neutron Stars”
- January 26 - 29 2010: International Conference “14th Gravitational Wave Data Analysis Workshop”, University of Rome “La Sapienza”, Rome, Italy
 - **invited review talk** on “General Relativistic Simulations of Compact Binaries”

Contributed Seminars and Talks (51 in total, only most recent ones listed)

- December 11 - 13 2019: SM & FT 2019 (Bari, Italy), talk on “TEONGRAV: HPC Simulations of Gravitational Wave Sources”
- April 22 - 26 2019: PHAROS Conference 2019 (Platja D’Aro - Girona, Spain), talk on “Effects of Chiral Effective Field Theory Equation of State on Binary Neutron Star Mergers”
- July 31 - August 4 2017: INT Workshop “Observational Signatures of r-process Nucleosynthesis in Neutron Star Mergers” (Seattle, WA, USA), talk on “Magnetic Field Effects in the Post-Merger Phase of Binary Neutron Stars”
- January 28 - 31 2017: “April Meeting” of the American Physical Society (Washington DC, USA), talk on “General Relativistic Simulations of Low-Mass Magnetized Binary Neutron Star Mergers”
- December 14 - 16 2016: Conference “CoCoNut Meeting 2016” (Valencia, Spain), talk on “General Relativistic Simulations of Binary Neutron Star Mergers with WhiskyMHD”
- December 13 2016: “Workshop on Numerical Relativity in matter spacetimes for Gravitational Wave astronomy (NRmGW)” (Valencia, Spain), talk on “Magnetic Field Effects in Neutron Star Binaries”
- September 26 - 30 2016: Conference “Meeting of the Italian Physical Society (SIF)” (Padova, Italy), talk on “High-Mass Magnetized Binary Neutron Star Mergers And Short Gamma-Ray Bursts”
- September 13 - 14 2016: Workshop “NewCompStar meeting on oscillations and instabilities in neutron stars” (Southampton, UK), talk on “Structure of Stable Binary Neutron Star Merger Remnants: A Case Study”
- April 16 - 19 2016: April Meeting of the American Physical Society (Salt Lake City, UT, USA), talk on “High-Mass Magnetized Binary Neutron Star Mergers and Short Gamma-Ray Bursts”

Outreach Activities

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

Press Releases

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

Numerical Codes

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

Computational Skills

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

Personal

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

Refereed Publications

(76 publications, h-index=41, ~6000 citations in NASA ADS)

(LIGO-Virgo-KAGRA Collaboration publications are not included in the following list)

1. Cipolletta F., Kalinani J. V., **Giacomazzo B.**¹, Ciolfi R. 2020, *Spritz: a new fully general-relativistic magnetohydrodynamic code*, Classical and Quantum Gravity, **37**, 135010
2. Endrizzi A., Perego A., Fabbri F. M., Branca L., Radice D., Bernuzzi S., **Giacomazzo B.**, Pederiva F., Lovato A. 2020, *Thermodynamics conditions of matter in the neutrino decoupling region during neutron star mergers*, The European Physical Journal A, **56**, 15
3. Ciolfi R., Kastaun W., Kalinani J. V., **Giacomazzo B.** 2019, *First 100 ms of a long-lived magnetized neutron star formed in a binary neutron star merger*, Phys. Rev. D, **100**, 023005
4. Endrizzi A., Logoteta D., **Giacomazzo B.**, Bombaci I., Kastaun W., Ciolfi R. 2018, *Effects of chiral effective field theory equation of state on binary neutron star mergers*, Phys. Rev. D, **98**, 043015
5. Lazzati D., Perna R., Morsony B. J., López-Cámara D., Cantiello M., Ciolfi R., **Giacomazzo B.**, Workman J. C. 2018, *Late Time Afterglow Observations Reveal a Collimated Relativistic Jet in the Ejecta of the Binary Neutron Star Merger GW170817*, Phys. Rev. Letters, **120**, 241103
6. Kelly B., Baker J., Etienne Z., **Giacomazzo B.**, Schnittman J. 2017, *Prompt Electromagnetic Transients from Binary Black Hole Mergers*, Phys. Rev. D, **96**, 123003
7. Kastaun W., Ciolfi R., Endrizzi A., **Giacomazzo B.** 2017, *Structure of stable binary neutron star merger remnants: Role of initial spin*, Phys. Rev. D, **96**, 043019
8. Piro A. L., **Giacomazzo B.**, Perna R. 2017, *The Fate of Neutron Star Binary Mergers*, ApJ Letters, **844**, L19
9. Ciolfi R., Kastaun W., **Giacomazzo B.**, Endrizzi A., Siegel D., Perna R. 2017, *General relativistic magnetohydrodynamic simulations of binary neutron star mergers forming a long-lived neutron star*, Phys. Rev. D, **95**, 063016
10. Kastaun W., Ciolfi R., **Giacomazzo B.** 2016, *Structure of Stable Binary Neutron Star Merger Remnants: a Case Study*, Phys. Rev. D, **94**, 044060
11. Kawamura T., **Giacomazzo B.**, Kastaun W., Ciolfi R., Endrizzi A., Baiotti L., Perna R. 2016, *Binary Neutron Star Mergers and Short Gamma-Ray Bursts: Effects of Magnetic Field Orientation, Equation of State, and Mass Ratio*, Phys. Rev. D, **94**, 064012
12. Endrizzi A., Ciolfi R., **Giacomazzo B.**, Kastaun W., Kawamura T. 2016, *General Relativistic Magnetohydrodynamic Simulations of Binary Neutron Star Mergers with the APR4 Equation of State*, Classical and Quantum Gravity, **33**, 164001
13. Perna R., Lazzati D., **Giacomazzo B.** 2016, *Short Gamma-Ray Bursts from the Merger of Two Black Holes*, ApJ Letters, **821**, L18
14. **Giacomazzo B.**, Zrake J., Duffell P., MacFadyen A. I., Perna R. 2015, *Producing Magnetar Magnetic Fields in the Merger of Binary Neutron Stars*, ApJ, **809**, 39

¹corresponding author

15. Dall’Osso S., **Giacomazzo B.**, Perna R., and Stella L. 2015, *Gravitational waves from massive magnetars formed in binary neutron star mergers*, ApJ, **798**, 25
16. Read J. S., Baiotti L., Creighton J. D. E., Friedman J. L., **Giacomazzo B.**, Kyutoku K., Markakis C., Rezzolla L., Shibata M., Taniguchi K. 2013, *Matter effects on binary neutron star waveforms*, Phys. Rev. D, **88**, 044042
17. Dionysopoulou K., Alic D., Palenzuela C., Rezzolla L., and **Giacomazzo B.** 2013, *General-Relativistic Resistive Magnetohydrodynamics in three dimensions: formulation and tests*, Phys. Rev. D, **88**, 044020
18. **Giacomazzo B.** and Perna R. 2013, *Formation of Stable Magnetars from Binary Neutron Star Mergers*, ApJ Letters, **771**, L26
19. Andersson N., Baker J., Belczynski K., Bernuzzi S., Berti E., Cadonati L., Cerda-Duran P., Clark J., Favata M., Finn L. S., Fryer C., **Giacomazzo B.**, et al 2013, *The Transient Gravitational-Wave Sky*, Classical and Quantum Gravity, **30**, 193002 (note: I was one of the main authors and responsible in particular of section IIA “Compact Object Binaries and Short Gamma-ray Bursts” and of the Conclusions)
20. **Giacomazzo B.**, Perna R., Rezzolla L., Troja E., and Lazzati D. 2013, *Compact Binary Progenitors of Short Gamma-Ray Bursts*, ApJ Letters, **762**, L18
21. **Giacomazzo B.** and Perna R. 2012, *General Relativistic Simulations of Accretion Induced Collapse of Neutron Stars to Black Holes*, ApJ Letters, **758**, L8
22. **Giacomazzo B.**, Baker J. G., Miller M. C., Reynolds C. S., and van Meter J. R. 2012, *General Relativistic Simulations of Magnetized Plasmas around Merging Supermassive Black Holes*, ApJ Letters, **752**, L15
23. **Giacomazzo B.**, Rezzolla L., and Stergioulas N. 2011, *Collapse of differentially-rotating neutron stars and cosmic censorship*, Phys. Rev. D, **84**, 024022
24. Baiotti L., Damour T., **Giacomazzo B.**, Nagar A., and Rezzolla L. 2011, *Accurate numerical simulations of inspiralling binary neutron stars and their comparison with effective-one-body analytical models*, Phys. Rev. D, **84**, 024017
25. Rezzolla L., **Giacomazzo B.**, Baiotti L., Granot J., Kouveliotou C., and Aloy M. A. 2011, *The missing link: Merging neutron stars naturally produce jet-like structures and can power short Gamma-Ray Bursts*, ApJ Letters, **732**, L6
26. **Giacomazzo B.**, Rezzolla L., and Baiotti L. 2011, *Accurate evolutions of inspiralling and magnetized neutron-stars: equal-mass binaries*, Phys. Rev. D, **83**, 044014
27. Baiotti L., Damour T., **Giacomazzo B.**, Nagar A., and Rezzolla L. 2010, *Analytic modeling of tidal effects in the relativistic inspiral of binary neutron stars*, Phys. Rev. Letters, **105**, 261101
28. Rezzolla L., Baiotti L., **Giacomazzo B.**, Link D., and Font J. A. 2010, *Accurate evolutions of unequal-mass neutron-star binaries: properties of the torus and short GRB engines*, Classical and Quantum Gravity, **27**, 114105
29. Corvino G., Rezzolla L., Bernuzzi S., De Pietri R., and **Giacomazzo B.** 2010, *On the shear instability in relativistic neutron stars*, Classical and Quantum Gravity, **27**, 114104

30. **Giacomazzo B.**, Rezzolla L., and Baiotti L. 2009, *Can magnetic fields be detected during the inspiral of binary neutron stars?*, MNRAS Letters, **399**, L164-L168
31. Baiotti L., **Giacomazzo B.**, and Rezzolla L. 2009, *Accurate evolutions of inspiralling neutron-star binaries: assessment of the truncation error*, Classical and Quantum Gravity, **26**, 114005
32. Mizuno Y., Zhang B., **Giacomazzo B.**, Nishikawa K.-I., Hardee P. E., Nagataki S., and Hartmann D. H. 2009, *Magnetohydrodynamic Effects in Propagating Relativistic Jets: Reverse Shock and Magnetic Acceleration*, ApJ Letters, **690**, L47-L51
33. Kellerman T., Baiotti L., **Giacomazzo B.**, and Rezzolla L. 2008, *An improved formulation of the relativistic hydrodynamics equations in 2D Cartesian coordinates*, Classical and Quantum Gravity, **25**, 225007
34. Meliani Z., Keppens R., and **Giacomazzo B.** 2008, *Faranoff-Riley type I jet deceleration at density discontinuities: Relativistic hydrodynamics with realistic equation of state*, Astronomy & Astrophysics, **491**, 321-337
35. Baiotti L., **Giacomazzo B.**, and Rezzolla L. 2008, *Accurate evolutions of inspiralling neutron-star binaries: prompt and delayed collapse to black hole*, Phys. Rev. D, **78**, 084033
36. **Giacomazzo B.** and Rezzolla L. 2007, *WhiskyMHD: a new numerical code for general relativistic magnetohydrodynamics*, Classical and Quantum Gravity, **24**, 235-258
37. **Giacomazzo B.** and Rezzolla L. 2006, *The Exact Solution of the Riemann Problem in Relativistic Magnetohydrodynamics*, J. Fluid Mech., **562**, 223-259

Publications in Conference Proceedings

1. Aloy M. A., Rezzolla L., **Giacomazzo B.**, and Obergaulinger M. 2012, *Powering Short GRBs by Mergers of Moderately Magnetized Neutron Stars*, proceedings of the international conference “Numerical modeling of space plasma flows (astronom 2011)”, *ASP Conference Series*, **459**, 49
2. Font J. A., Rezzolla L., **Giacomazzo B.**, Baiotti L., and Link D. 2011, *Towards modelling the central engine of short GRBs*, proceedings of the “Spanish Relativity Meeting (ERE 2010)”, *Journal of Physics: Conference Series*, **314**, 012013
3. **Giacomazzo B.**, Rezzolla L., Baiotti L., Link D., and Font J. A. 2011, *General Relativistic Simulations of Binary Neutron Star Mergers*, proceedings of the “Gamma Ray Bursts 2010 Conference”, *AIP Conference Series*, **1358**, 187-190
4. Mizuno Y., Zhang B., **Giacomazzo B.**, Nishikawa K.-I., Hardee P. E., Nagataki S., and Hartmann D. H. 2010, *Magnetohydrodynamic Effects in Relativistic Ejecta*, proceedings of the international conference “High-Energy Phenomena in Relativistic Outflows II”, *International Journal of Modern Physics D*, **19**, 991-996
5. Mizuno Y., Zhang B., **Giacomazzo B.**, Nishikawa K.-I., Hardee P. E., Nagataki S., and Hartmann D. H. 2009, *Magnetohydrodynamic Effects in Propagating Relativistic Ejecta: Reverse Shock and Magnetic Acceleration*, proceedings of the “GAMMA-RAY BURST: Sixth Huntsville Symposium”, *AIP Conference Series*, **1133**, 229-231

General Public Articles

- L. Baiotti and **B. Giacomazzo**, “*Chi fa l’onda*”, article in italian about sources of gravitational waves published by INFN (Italy) on the public magazine *Asimmetrie*, **5/9.07**, September 2007

CURRICULUM VITAE

Massimo Dotti

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Università degli Studi di Milano Bicocca
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E-mail: Massimo.Dotti@mib.infn.it
Piazza della Scienza 3
20126 Milano Italy

Research Interests

- **Black hole binaries**

dynamical evolution

observational evidence of massive black hole binaries

electromagnetic counterparts to gravitational waves detections

massive black hole spins

recoiling massive black holes

- **Black holes in AGN:**

massive black hole fueling and accretion processes during mergers

massive black hole spin and its correlation with the galactic morphology

radio loudness/morphology relation

broad line region dynamics and geometry

narrow-line Seyfert 1 / broad-line Seyfert 1 dichotomy

- **Galactic dynamics and evolution:**

Physical processes quenching the star formation in galaxies

Formation of stellar bars and impact on the host galaxy

Formation and evolution of isolated galaxies in cosmological simulations

Education	PhD in Astrophysics, University of Como	2008
	Thesis: <i>Massive Black Hole Binaries in Circumnuclear Discs: Orbital Dynamics and Gas Accretion</i>	

	MS <i>cum Laude</i> , in physics University of Como	2004
	Thesis: <i>The Accretion Problem in the Galactic Center</i>	

Positions	Associate professor at Università di Milano Bicocca	2017-now
	Assistant professor at Università di Milano Bicocca	2010-2017
	Postdoctoral fellow at Max-Planck-Institut für Astrophysik	2009-2010
	Postdoctoral researcher at University of Michigan	2008-2009
	Research associate at University of Como	2007-2008
	Research assistant at University of Como	2004-2007

Teaching:

Massive Black Holes (PhD course at the University of Birmingham)	2016
Extragalactic astronomy (Graduate level - University of Milano-Bicocca)	2017-now
Introduction to Astronomy (Undergraduate level - University of Milano-Bicocca)	2014-2018
Cosmology (Graduate level - University of Milano-Bicocca)	2010-now

Management/Services:

Vice-Director of the Department of Physics 'G. Occhialini'	2018-now
Responsible for the Master in Astrophysics and Space Physics	2018-now
Member of the 'Commissione Paritetica Docenti Studenti'	2015-2018

Postdoctoral supervision:

Matteo Bonetti, University of Milan	2019-now
Tullia Sbarrato, University of Milan	2014-2019

PhD students supervision:

Rossella Fanali, University of Milan	2013-2015
Alessandro Lupi, University of Como	2013-2015
Tommaso Zana, University of Como	2015-2019

Graduate students supervision:

Ludovica Varisco, University of Milan	2019-now
Fabio Rigamonti, University of Milan	2019-now
Elia Cenci, University of Milan	2017-2019
Luca Sala, University of Milan	2018-2019
Andrea Incatasciato, University of Milan	2017-2018
Daniele Spinoso, University of Milan	2015-2016
Elisa Bortolas, University of Milan	2014-2015
Tommaso Zana, University of Milan	2014-2015
Chiara Mazzucchelli, University of Milan	2012-2013
Laura Paganini, University of Milan	2012-2013
Rachele Ferrone, University of Milan	2012-2013

Rossella Fanali, University of Milan	2011-2012
Simone Pallini, University of Milan	2010-2011
Carmen Montuori, University of Milan	2008-2009
Albino Perego, University of Milan	2008-2009
Massimo Cavadini, University of Como	2007-2008
Luca Stucchi, University of Milan	2006-2007

Undergraduate students supervision:

Riccardo Spinelli, University of Milan	2016
Ludovica Varisco, University of Milan	2016
Chiara Salvaggio, University of Milan	2016
Matteo Zoccolan, University of Milan	2015
Andrea Incatasciato, University of Milan	2015
Andrea Puggioli, University of Milan	2014
Elisa Bortolas, University of Milan	2013
Maria Cristina Fortuna, University of Milan	2013
Patrizia Merlotti, University of Milan	2011
Giorgio Bambozzi, University of Milan	2011
Duncan Campbell, University of Michigan	2009
Michael Eugene Katolik, University of Michigan	2008

Schools and meeting organizations:

5th YAGN rendezvous (SOC), September 2019

(Co-organizer Pedro R. Capelo - University of Zurich, Andrea Negri - Instituto de Astrofísica de Canarias)

<https://www.galnuc.elte.hu/yagn18/yagn18.html>

4th YAGN rendezvous (SOC), October 2018

(Co-organizer Pedro R. Capelo - University of Zurich, Bence Kocsis - Eotvos University)

<https://www.galnuc.elte.hu/yagn18/yagn18.html>

Waves on the lake: the astrophysics behind gravitational waves (SOC), COMO, May 2018

<http://abgw.lakecomoschool.org>

3rd YAGN rendezvous (SOC), October 2017

(Co-organizer Pedro R. Capelo - University of Zurich, Silvia Bonoli - CEFCA)

<https://www.cefca.es/research/yagn17>

2nd YAGN rendezvous (SOC), October 2016

(Co-organizer Pedro R. Capelo - University of Zurich, Alessandro Lupi - Institut d'Astrophysique de Paris)

http://www.iap.fr/vie_scientifique/ateliers/yagn/2016/yagn16_program.html

Astro-GR@Benasque (SOC), June 2016

(Co-organizer Pau Amaro Seoane - Albert Einstein Institute)

<https://members.aei.mpg.de/amaro-seoane/astro-gr-benasque/>

1st YAGN rendezvous (SOC), October 2015

(Co-organizer Pedro R. Capelo, University of Zurich)

<http://fisica.mib.infn.it/media/homepages/astrofisica/yagn/yagn15.html>

Other Professional Activities:

Reviewer for Nature, the Astrophysical Journal (ApJ), the Monthly Notices of the Royal Astronomical Society (MNRAS), Advances in Astronomy

Outreach:

Speaker at the GR100 event held at the University November 2015

<http://fisica.mib.infn.it/media/homepages/astrofisica/GR100/GR100.html>

Video of the talk (Italian):

<https://www.youtube.com/watch?v=aRWvBZSVlmg>

Lectures on introduction to general relativity for high schools (2016–now)

Memberships:

Istituto Nazionale di Astrofisica (INAF, Italian institute for astrophysics) 2011–now

Istituto Nazionale di Fisica Nucleare (INFN, Italian institute for nuclear physics) 2011–now

American Physical Society (APS) 2011

American Astronomical Society (AAS) 2009

PUBLICATION LIST

Massimo Dotti

Accepted publications

1. *Unveiling sub-parsec supermassive black hole binary candidates in active galactic nuclei*, Serafinelli R., Severgnini P., Braitto B., Della Ceca R., Vignali C., Ambrosino F., Ciccone C., Zaino A., **Dotti M.**, Sesana A., Gianolli V.E., Ballo L., La Parola V., Matzeu G.A., 2020, ApJ, accepted
2. *Global torques and stochasticity as the drivers of massive black hole pairing in the young Universe*, Bortolas E., Capelo P.R., Zana T., Mayer L., Bonetti M., **Dotti M.**, Davies M.B., Madau P., 2020, MNRAS, accepted
3. *Black hole mergers from dwarf to massive galaxies with the NewHorizon and Horizon-AGN simulations*, Volonteri M., Pfister H., Beckman R.S. Dubois Y., Colpi M., Conselice C.J., **Dotti M.**, Martin G., Jackson R., Kraljic K., Pichon C., Trebitsch M., Sukyoung K., Devriendt J., Peirani S., 2020, MNRAS, accepted
4. *From galactic nuclei to the halo outskirts: tracing supermassive black holes across cosmic history and environments*, Izquierdo-Villalba D., Bonoli S., **Dotti M.**, Sesana A., Rosas-Guevara Y., Spinoso D., 2020, MNRAS, 495, 4681
5. *Dynamical friction-driven orbital circularisation in rotating discs: a semi-analytical description*, Bonetti M., Bortolas E., Lupi A., **Dotti M.**, Raimundo S.I., 2020, MNRAS, 494, 3053
6. *On the eccentricity evolution of massive black hole binaries in stellar backgrounds*, Bonetti M., Rasskazov A., Sesana A., **Dotti M.**, Haardt F., Leigh N.W.C., Arca Sedda M., Fragione G., Rossi E. 2020, MNRAS Letters, 493, L114
7. *Real galaxy mergers from galaxy pair catalogs*, Pfister H, **Dotti M.**, Laigle C., Dubois Y., Volonteri M., 2020, MNRAS, 493, 922
8. *The buildup of strongly-barred galaxies in the TNG100 simulation*, Rosas-Guevara Y., Bonoli S., **Dotti M.**, Zana T., Nelson D., Pillepich A., Ho L.C., Izquierdo-Villalba D., Hernquist L., Pakmor R., 2020, MNRAS, 491, 2547
9. *The Quest for Dual and Binary Supermassive Black Holes: A Multi-Messenger View*, De Rosa A. et al., 2019, New Astronomy Reviews, 8601525D

10. *Neutron star binary orbits in their host potential: effect on early r-process enrichment*, Bonetti M., Perego A., **Dotti M.**, & Cresciutti G., 2019, MNRAS, 490, 296
11. *Testing the blast-wave AGN feedback scenario in MCG-03-58-007*, Sirressi M., Cicone C., Severgnini P., Braito V., **Dotti M.**, Della Ceca R., Reeves J.N., Matzeu G.A., Vignali C., Ballo L., 2019, MNRAS, 489, 1927
12. *Multi-Messenger Astrophysics with Pulsar Timing Arrays*, Kelley L.Z., et al., 2019, submitted to the Astro2020 decadal survey
13. *ALMA and HST kiloparsec-scale imaging of a quasar-galaxy merger at $z \approx 6.2$* , Decarli R., **Dotti M.**, et al., 2019, ApJ, 880, 157
14. *Barred galaxies in cosmological zoom-in simulations: the importance of feedback*, Zana T., Capelo P., **Dotti M.**, Mayer L., Lupi A., Haardt F., Bonoli S., Shen S., 2019, MNRAS, 488, 1864
15. *Black holes, gravitational waves and fundamental physics: a roadmap*, Barack L., et al., White paper for the COST action "Gravitational Waves, Black Holes, and Fundamental Physics", 2019, CQG, 36, 3001
16. *The erratic dynamical life of black hole seeds in high-redshift galaxies*, Pfister H., Volonteri M., **Dotti M.**, Colpi M., 2019, MNRAS, 486, 101
17. *Bar resilience to flybys in a cosmological framework*, Zana T., **Dotti M.**, Capelo P., Mayer L., Haardt F., Shen S., Bonoli S., 2018, MNRAS, 479, 521
18. *On the orientation of Narrow Line Seyfert I*, Sbarrato T., **Dotti M.**, Ghirlanda G., Tavecchio F., 2018, A&A, 616, A43
19. *AGN mass estimates in large spectroscopic surveys: the effect of host galaxy light*, Varisco L., Sbarrato T., Calderone G., **Dotti M.**, 2018, A&A, 618, 127
20. *r-process nucleosynthesis in the early Universe through fast mergers of compact binaries in triple systems*, Bonetti M., Perego A., Capelo P., **Dotti M.**, & Coleman M.M., 2018, PASA, 35, 17
21. *The influence of Massive Black Hole Binaries on the morphology of Merger Remnants*, Bortolas E., Gualandris A., **Dotti M.**, & Reed J.I., 2018, MNRAS, 477, 2310

22. *Probing black hole accretion in quasar pairs at high redshift*, Vignali C., Piconcelli E, Perna M., Hennawi J., Gilli R., Comastri A., Zamorani G., **Dotti M.**, Mathur S., 2018, MNRAS, 477, 780
23. *External versus internal triggers of bar formation in cosmological simulations*, Zana T., **Dotti M.**, Bonoli S., Capelo P., Haardt F., Mayer L., Spinoso D., 2018, MNRAS, 473, 2608
24. *Probing the formation history of the nuclear star cluster at the Galactic Centre with millisecond pulsars*, Abbate F., Mastrobuono-Battisti A., Colpi M., Possenti A., Sippel A.C., & **Dotti M.**, 2018, MNRAS, 473, 927
25. *QSFIT: Automatic analysis of optical/UV AGN spectra*, Calderone G., Nicastro L., Ghisellini G., **Dotti M.**, Sbarrato T., Colpi M., Shankar F., 2017, MNRAS, 472, 4051
26. *The birth of supermassive black hole binary*, Pfister H., Lupi A., Capelo P., Volonteri M., Bellovary J., **Dotti M.**, 2017, MNRAS, 471, 3646
27. *A survey of dual active galactic nuclei in simulations of galaxy mergers: frequency and properties*, Capelo P., **Dotti M.**, Volonteri M., Mayer L., Bellovary J.M., Shen S., 2017, MNRAS, 469, 4437
28. *Young and turbulent: the early life of massive galaxy progenitors*, Fiacconi D., Mayer L., Madau P., Lupi A., **Dotti M.**, Haardt F., 2017, MNRAS, 467, 4080
29. *Bars as seen by Herschel and Sloan*, Consolandi G., **Dotti M.**, Gargiulo F., Gavazzi G., Boselli A. 2017, A&A, 598, 114
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37. *Quasi-periodicities at year-like timescales in Blazars*, Sandrinelli A., Covino S., **Dotti M.**, Treves A., 2016, AJ, 151, 54
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89. *Imprints of recoiling massive black holes on the hot gas of early-type galaxies*, Devecchi B., Rasia E., **Dotti M.**, Volonteri M., Colpi M., 2009, MNRAS, 394, 633
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92. *Supermassive black hole binaries in gaseous and stellar circumnuclear discs: orbital dynamics and gas accretion*, **Dotti M.**, Colpi M., Haardt F., Mayer L., 2007, MNRAS, 379, 956
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Proceedings

- *A path to radio-loudness through gas-poor galaxy mergers and the role of retrograde accretion*, **M. Dotti**, M. Colpi, L. Maraschi, A. Perego, M. Volonteri To be published in the proceedings of the conference "Accretion and Ejection in AGN: A global view, June 22-26 2009 - Como, Italy" (arXiv:1004.2843)
- *SDSSJ092712.65+294344.0: A Candidate Massive Black Hole Binary*, **M. Dotti**, M. Volonteri bulletin of the American Astronomical Society, 41, 385
- *Massive black hole binaries in gaseous nuclear discs*, **M. Dotti**, M. Colpi, F. Haardt, L. Mayer to appear in the proceedings of the Conference "The Central Kiloparsec: Active Galactic Nuclei and Their Hosts", Ierapetra 4-6 June 2008, Greece, Memorie della Societa Astronomica Italiana
- *Inspiral of double black holes in gaseous nuclear disks*, **Dotti M.**, Colpi M., Haardt F. 2008, "Relativistic Astrophysics and Cosmology – Einstein's Legacy".
- *Simulating the dynamics of binary black holes in nuclear gaseous discs* **M. Dotti**, M. Colpi, F. Haardt, L. Mayer Formation and Evolution of Galaxy Bulges, Proceedings of the International Astronomical Union, IAU Symposium, 2007, 245, 241
- *Birth of massive black hole binaries*, Colpi M., **Dotti M.**, Mayer L., Kazantzidis S., to appear in "2007 STScI Spring Symposium: Black Holes"
- *On the inspiral of Massive Black Holes in gas-rich galaxy mergers*, Colpi M., S. Callegari, **Dotti M.**, S. Kazantzidis, L. Mayer 2007, "The Multicoloured Landscape of Compact Objects and their Explosive Origins".

SCHOOLS, MEETINGS & CONFERENCES

†: SOC; *: invited talk; **: contributed talk

**Getting ready to descend the slippery slope of multimessenger cosmological black holes data*

Location: Sexten, date: 10-14 February 2020

**Astroblack-Italy*

Location: Milan, date: 28-29 October 2019

† *YAGN19*

Location: San Cristóbal de La Laguna, date: 23-25 September 2019

† *YAGN18*

Location: Budapest, date: 29-31 October 2018

***Massive black holes in evolving galaxies: from quasars to quiescence*

Location: Paris, date: 25-29 June 2018

† *Waves in the lake: the astrophysics behind gravitational waves*

Location: Como, date: 28 May-1 June 2018

**The Quest for Multiple Supermassive Black Holes: A Multi-Messenger View*

Location: Leiden, date: 20-24 November 2017

† *YAGN17*

Location: Teruel, date: 23-25 October 2017

**New Frontiers in Gravitational-Wave Astrophysics*

Location: Rome, date: 19-22 June 2017

**The disc migration issue: from protoplanets to supermassive black holes*

Location: Cambridge, date: 22-24 May 2017

† *YAGN16*

Location: Paris, date: 24-25 November 2016

†*Astro-GR@Benasque*

Location: Benasque, date: 5-18 June 2016

†*YAGN15*

Location: Milano, date: 29-30 October 2015

**Unveiling the AGN-Galaxy evolution connection*

Location: Puerto Varas, date: 9-13 March 2015

**Compact Objects as Astrophysical and Gravitational Probes*

Location: Leiden, date: 2-6 February 2015

**Colorful Galaxies*

Location: Menaggio, date: 27-30 April 2014

**Teongrav meeting*

Location: Rome, date: 4-5 February 2014

**Anillo Team Meeting*

Location: Santa Cruz (Chile), date: 15-16 November 2013

The Alajar meeting 2013

Location: Alajar, date: 16-27 September 2013

**Massive Black Holes: Birth, Growth and Impact*

Location: Santa Barbara, date: 5-9 August 2013

**Astro-GR@Beijing*

Location: Beijing, date: 3-7 September 2012

***Black holes by the black sea*

Location: Istanbul, date: 25-29 June 2012

***Interacting Galaxies and Binary Quasars:*

A Cosmic Rendezvous

Location: Trieste, date: 2-5 April 2012

**Astro-GR@Mallorca*

Location: Palma de Mallorca, date: 5-9 September 2011

**Single and Double Black Holes in Galaxies*

Location: Ann Arbor, date: 22-25 August 2011

**American Physical Society Meeting*

Location: Anaheim, date: 30 April- 3 May 2011

**Bridging Electromagnetic Astrophysics and Cosmology with Gravitational Waves*

Location: Milan, date: 28-30 March 2011

**IPMU Workshop on Black Holes*

Location: Kashiwa, date: 21-25 February 2011

**LISA Astro-GR@Paris*

Location: Paris, date: 13-17 September 2010

***What drives the growth of black holes?*

Location: Durham, date: 26-29 July 2010

***WE-Heraeus Seminar: Black Holes*

Location: Bad Honnef, date: 7-11 June 2010

***LISA massive black hole binaries in the cosmic landscape*

Location: Zurich, date: 10-12 February 2010

***Intermediate-Mass Black Holes: from First Light to Galactic Nuclei*

Location: Irvine, date: 1-3 April 2009

**Observational Signatures of Black Hole Mergers*

Location: Baltimore, date: 30 March - 1 April 2009

***213th AAS Meeting*

Location: Long Beach, date: 4-8 January 2009

**Black Hole Astrophysics with Radio and Gravitational Wave Observations*

Location: Charlottesville, date: 7-8 November 2008

***The Central Kiloparsec: Active Galactic Nuclei and Their Hosts*

Location: Ierapetra, date: 4-6 June 2008

**LISA Astro-GR@ComoMilano*

Location: Como, date: 6-8 February 2008

**JENAM 2007: Our non-stable Universe*

Location: Yerevan, date: 20-25 August 2007

***National school in astrophysics: galaxy dynamic – active galactic nuclei*

Location: Bertinoro, date: 7/12 May 2006

INVITED SEMINARS

Astronomical Observatory, Bologna, October 2019
Institute for Computational Science, Zurich, March 2016
Astronomical Observatory, Rome, February 2016
Brera Observatory, Merate, December 2014
Max-Planck-Institut für Astronomie, Heidelberg, January 2014
Pontificia Universidad Catolica de Chile, November 2013
University of California, Santa Cruz, July 2013
Astronomical Observatory, Arcetri, March 2013
Technion, Haifa, February 2013
Institut d'Astrophysique de Paris (IAP), Paris, October 2012
Brera Observatory, Milan, February 2012
Astronomical Observatory, Bologna, January 2011
Albert Einstein Institut, Potsdam, November 2010
Albert Einstein Institut, Potsdam, May 2010
Max-Planck-Institut für Astronomie, Heidelberg, May 2010
Max-Planck-Institut für Astrophysik, Munich, February 2010
Università degli Studi dell'Insubria, Como, October 2009
The Pennsylvania State University, State College, September 2009
Brera Observatory, Milan, June 2009
University of Maryland, Washington, April 2009
Canadian Institute for Theoretical Astrophysics (CITA), Toronto, December 2008
Instituto Astrofisica Andalucia (CSIC), Granada, June 2008
Leiden Observatory, Leiden, September 2007
Brera Observatory, Merate, June 2007

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Milano, 14th of September 2020