

# Michele Fumagalli

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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*.
- 2020- **Associate**, *INAF - Osservatorio Astronomico di Trieste*.
- 2020- **Visiting Professor**, *Durham University*.
- 2018-2020 **Professor**, *Durham University*.
- 2017-2018 **Associate Professor (Reader)**, *Durham University*.
- 2014-2017 **Assistant Professor (Lecturer)**, *Durham University*.
- 2013-2014 **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 (principal investigator or primary co-investigator)

- 2023 **Bando Prin 2022 PNRR**, MUR, (Node PI).
- 2022 **Dipartimenti di Eccellenza 2023-2027**, MUR, (Deputy PI).
- 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, Seminars, Conferences

- Nov., 2024 **A decade of discoveries with MUSE and beyond**, *ESO*, Invited Review.  
The MUSE contribution to mapping the cosmic baryon cycle over 10 billion years
- Sep., 2024 **ILR workshop at Osaka**, *Osaka, Japan*, Invited.  
The gas environment of galaxies across 10 billion years
- Jun., 2024 **IFPU Focus Week: Where the CircumGalactic medium meets the galaxy environment**, *Italy*, SOC member.
- May, 2024 **OPINAS Colloquium**, *Max-Planck for Extraterrestrial Physics*, invited.  
The gas environment of galaxies across 10 billion years
- Apr., 2024 **Extreme Galaxies in their Extreme Environments at Extremely Early Epochs**, *Iceland*, SOC member.
- Mar., 2024 **Bologna Joint Astrophysical Colloquium**, *INAF/University of Bologna, IT*, invited.  
The gas environment of galaxies across 10 billion years
- Jan., 2024 **Astronomy colloquium**, *Lancaster, UK*, invited.  
The gas environment of galaxies across 10 billion years

- Sep., 2023 **IMAGING 2023**, *Italy*, Organizing committee.  
Connecting the dots between the CGM and the larger-scale environment
- May., 2023 **IASF Colloquium Series**, *IASF-INAF, Milan*, Invited.  
The gas environment of galaxies across 10 billion years
- Apr., 2023 **The Department of Astronomy Colloquium Series**, *Tsinghua University*, Invited.  
The gas environment of galaxies across 10 billion years
- Mar., 2023 **The Circum-Galactic Medium across cosmic time: an observational and modeling challenge**, *The 52nd "Saas-Fee Advanced Course"*, Invited lecturer.  
The multiphase CGM in absorption and emission
- Feb., 2023 **The Multiphase Circumgalactic Medium**, *Ringberg Castle, Germany*, Invited.  
The gas environment of galaxies across 10 billion years
- Nov., 2022 **IoA colloquium**, *Cambridge, UK*, invited.  
The gas environment of galaxies across 10 billion years
- Sep., 2022 **What Matter(s) Around Galaxies 2022**, *Italy*, SOC chair and lead organizer.  
Connecting the dots between the CGM and the larger-scale environment
- Jun., 2021 **KIAA Forum on Gas in Galaxies for Early Career Scientists**, *Kavli Institute for Astronomy and Astrophysics*, invited.  
Flows around galaxies: advancements, challenges and opportunities
- May., 2021 **Multi-object Spectroscopy for Statistical Measures of Galaxy Evolution Workshop**, *Space Telescope Science Institute*, invited review.  
Studying gas flows around galaxies with multi object spectroscopy
- May., 2021 **Extragalactic Seminar Series**, *University of Victoria*, invited.  
Shedding light on gas around galaxies across cosmic times
- Apr., 2021 **Astronomy Colloquium**, *University of California, Santa Cruz*, invited.  
Shedding light on gas around galaxies across cosmic times
- Mar., 2021 **Physics Colloquium**, *North Carolina State University*, invited.  
Shedding light on gas around galaxies across cosmic times
- Nov., 2020 **Kapteyn Institute Colloquium**, *University of Groningen*, invited.  
Shedding light on gas around galaxies across cosmic times
- 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  $\pm 20$ : 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

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## Proposal History (principal investigator or primary co-investigator)

- 2024 ALMA; 32 hours, cycle 11.
- 2023 HST; 100 SNAP targets, cycle 31.
- 2022 ALMA; 9 hours, cycle 9.
- 2022 ESO/VLT; 16 hours, P109.
- 2021 ALMA; 9 hours, cycle 8.
- 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.

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## Teaching and Advising

- 2024- Introduction to Galaxies; MSc at University of Milano-Bicocca.

- 2024- Didactics of Mathematics; School of Education, University of Milano-Bicocca.
  - 2021- Medical Physics; School of Medicine, University of Milano-Bicocca.
  - 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. Davide Tornotti (2024-), University of Milano-Bicocca.
  - Mr. Georg Herzog (2020-2024), University of Milano-Bicocca.
  - Mr. Calvin Sykes (2017-2021), Durham University (PhD, 2021).
  - Ms. Louise Welsh (2017-2021), Durham University (PhD, 2021).
  - Mr. Ruari Mackenzie (2014-2018), Durham University (PhD, 2018).
  - Mr. Greg Ashworth (2014-2018), Durham University (PhD, 2018).
- PDRAs
- Dr. Francesco Pistis (2021-2023), University of Milano-Bicocca.
  - Dr. Trystyn Berg (2021-2023), University of Milano-Bicocca.
  - Dr. Louise Welsh (2021-2023), University of Milano-Bicocca.
  - Dr. Alessia Longobardi (2021-2023), University of Milano-Bicocca.
  - Dr. Emma Lofthouse (2018-2023), Durham University, University of Milano-Bicocca.
  - Dr. Rajeshwari Dutta (2019-2022), Durham University, University of Milano-Bicocca.
  - Dr. Alejandro Benitez Llambay (2021-2022), University of Milano-Bicocca.
  - Dr. Matteo Fossati (2018-2021), 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

- 2023- Co-lead of the outreach project “Un nuovo sguardo sul cielo di Milano” funded by NextGenerationEU
- 2023- Steering Committee, Bicocca Centre for Quantitative Cosmology, Dipartimenti di Eccellenza 2023
- 2022- Member of the International Astronomical Union
- 2021- Member of the Euclid Consortium
- 2021- Member of the MOSAIC/ELT Science working groups “First Light” and “Inventory of matter”
- 2021- Member of the Science Working Group, WEAVE survey
- 2020- Coordinator of Absorption Line Studies in the Quasar Working Group, WEAVE survey
- 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- HIRES/ELT 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

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## Refereed publications

1. Arnaudova, M.I. et al. 2024, A&A in press (arXiv:2411.13635). *WEAVE First Light Observations: Origin and Dynamics of the Shock Front in Stephan's Quintet.*
2. Dharmender, Joshi, R., **Fumagalli, M.** et al. 2024, A&A Letters in press (arXiv:2411.10525). *Star-Formation in Neutral Hydrogen Gas Reservoirs at Cosmic Noon.*
3. Pensabene, A., Galbiati, M., **Fumagalli, M.** et al. 2024, A&A submitted (arXiv:2410.06249). *The MUSE Ultra Deep Field (MUDF) VII. Probing high-redshift gas structures in the surroundings of ALMA-identified massive dusty galaxies.*
4. Das, S., et al. 2024, arXiv:2410.03824. *Baryonic Ecosystem in Galaxies (BEINGMgII) – II. Unveiling the Nature of Galaxies Harboring Cool Gas Reservoirs.*
5. Travascio, A., et al. 2024, arXiv:2410.03933. *X-ray view of a massive node of the Cosmic Web at  $z \sim 3$  I. An exceptional overdensity of rapidly accreting SMBHs.*
6. Galbiati, M., et al. 2024, arXiv:2410.03822. *Connecting the growth of galaxies to the large-scale environment in a massive node of the Cosmic Web at  $z \sim 3$ .*
7. Wang, W., et al. 2024, arXiv:2409.17956. *A Giant Disk Galaxy Two Billion Years After The Big Bang.*
8. Welsh, L., Cooke, R., **Fumagalli, M.**, et al. 2024, arXiv:2409.07525. *A survey of extremely metal-poor gas at cosmic noon: evidence of elevated  $[O/Fe]$ .*
9. Dutta, R., **Fumagalli, M.**, Fossati, M., et al. 2024, arXiv:2409.02182. *Metal line emission around  $z < 1$  galaxies.*
10. Pruto, G., **Fumagalli, M.**, Rafelski, M., et al. 2024, arXiv:2409.01786. *The stellar population of a  $z \approx 3.25$  Ly $\alpha$  emitting group associated with a damped Ly $\alpha$  absorber.*
11. **Fumagalli, M.** 2024, arXiv:2409.00174. *The multiphase circumgalactic medium and its relation to galaxies: an observational perspective.*
12. Beckett, A. et al. 2024, ApJ in press (arXiv:2408.11914). *The MUSE Ultra Deep Field (MUDF). VI. The relationship between galaxy properties and metals in the circumgalactic medium.*



13. Benitez-Llambay, A., Dutta, R., **Fumagalli, M.**, Navarro, J.F.. 2024, ApJ in press (arXiv:2406.18643). *Not So Round: VLA Observations of the Starless Dark Matter Halo Candidate Cloud-9.*
14. Tornotti, D., **Fumagalli, M.**, Fossati, M., et al. 2024, submitted (arXiv:2406.17035). *High-definition imaging of an extended filament connecting active quasars at cosmic noon.*
15. Galbiati, M., Dutta, R., **Fumagalli, M.** et al. 2024, A&A in press (arXiv:2406.10350). *MUSE Analysis of Gas around Galaxies (MAGG) – VI. The cool and enriched gas environment of  $z \geq 3$  Ly $\alpha$  emitters.*
16. Euclid Collaboration. 2024, A&A submitted (arXiv:2405.13491). *Euclid. I. Overview of the Euclid mission.*
17. Revalski, M., et al. 2024, ApJ in press (arXiv:2403.17047). *The MUSE Ultra Deep Field (MUDF). V. Characterizing the Mass-Metallicity Relation for Low Mass Galaxies at  $z \approx 1 - 2$ .*
18. D’Odorico, V., et al. 2023, submitted to Experimental Astronomy (arXiv:2311.16803). *Galaxy Formation and Symbiotic Evolution with the Inter-Galactic Medium in the Age of ELT-ANDES.*
19. Pensabene, A, et al. 2024, A&A, 684, 119. *ALMA survey of a massive node of the Cosmic Web at  $z \sim 3$ . I. Discovery of a large overdensity of CO emitters.*
20. Siressi, M., et al. 2024, AJ, 167, 166. *CLusters in the Uv as EngineS (CLUES). II. Sub-kpc scale outflows driven by stellar feedback.*
21. Dutta, R., Acebron, A., **Fumagalli, M.** et al. 2024, MNRAS, 528, 1895. *Probing coherence in metal absorption towards multiple images of strong gravitationally lensed quasars.*
22. Finn, M.K., et al. 2024, ApJ, 964, 13. *ALMA-LEGUS II: The Influence of Sub-Galactic Environment on Molecular Cloud Properties.*
23. Finn, M.K., et al. 2024, ApJ, 964, 12. *ALMA-LEGUS I: The Influence of Galaxy Morphology on Molecular Cloud Properties.*
24. Stephenson, H.M.O, et al. 2023, MNRAS, 527, 7891. *Quasar Sightline and Galaxy Evolution (QSAGE) – III. The mass-metallicity and fundamental metallicity relation in  $z \sim 2.2$  galaxies.*
25. Bortolini, G., et al. 2024, MNRAS, 527, 5339. *The spatially resolved star formation history of the dwarf spiral galaxy NGC 5474.*
26. Jin, S., et al. 2023, MNRAS. *The wide-field, multiplexed, spectroscopic facility WEAVE: Survey design, overview, and simulated implementation.*
27. de Beer, S. et al. 2023, MNRAS, 526, 1850 *Resolving the physics of Quasar Ly $\alpha$  Nebulae (RePhyNe): I. Constraining Quasar host halo masses through Circumgalactic Medium kinematics.*
28. Lusso, E., Nardini, E., **Fumagalli, M.** et al. 2023, MNRAS, 525, 4388. *The MUSE Ultra Deep Field (MUDF). IV. A pair of X-ray weak quasars at the heart of two extended Ly $\alpha$  nebulae.*
29. Jung, D.E. et al. 2023, ApJ, 954, 136. *Universal Upper End of the Stellar Initial Mass Function in the Young and Compact LEGUS clusters.*
30. Longobardi, A., Fossati, M., **Fumagalli, M.** et al. 2023, RASTI, 2, 470. *Towards an automatic approach to modelling the circumgalactic medium: new tools for mock making and fitting of metal profiles in large surveys.*

31. Welsh, L., Cooke, R., **Fumagalli, M.**, Pettini, M. 2023, MNRAS, 525, 527. *Towards ultra metal-poor DLAs: linking the chemistry of the most metal-poor DLA to the first stars.*
32. Teh, J.W. et al. 2023, MNRAS, 524, 1191. *Constraining the LyC escape fraction from LEGUS star clusters with SIGNALS HII region observations: A pilot study of NGC 628.*
33. Arrigoni Battaia, F. et al. 2023, A&A, 676, 51. *JCMT/SCUBA-2 uncovers an excess of  $850\mu m$  counts on megaparsec scales around high-redshift quasars. Characterization of the overdensities and their alignment with the quasars' Ly $\alpha$  nebulae.*
34. Urbano Stawinski, S.M et al. 2023, ApJ, 951, 135. *On the Metallicities and Kinematics of the Circumgalactic Media of Damped Ly $\alpha$  Systems at  $z \sim 2.5$ .*
35. Saccardi, A., Salvadori, S., D'Odorico, V. et al. 2023, ApJ, 948, 35, *Evidence of First Stars-enriched Gas in High-redshift Absorbers.*
36. Beckett, A., Morris, S.L., **Fumagalli, M.** et al. 2023, MNRAS, 521, 1113. *Modelling gas around galaxy pairs and groups using the Q0107 quasar triplet.*
37. Dutta, R., Fossati, M., **Fumagalli, M.** et al. 2023, MNRAS, 508, 4573. *Metal line emission from galaxy haloes at  $z \approx 1$ .*
38. Revalski, M., Rafelski, M., **Fumagalli, M.**, Fossati, M. et al. 2023, ApJS, 265, 40. *The MUSE Ultra Deep Field (MUDF) – III: Hubble Space Telescope WFC3 Grism Spectroscopy and Imaging.*
39. Galbiati, M., **Fumagalli, M.**, Fossati, M. et al. 2023, MNRAS, 524, 3474. *MUSE Analysis of Gas around Galaxies (MAGG) – V: Linking ionized gas traced by CIV and SiIV absorbers to Ly $\alpha$  emitting galaxies at  $z \approx 3.0 - 4.5$ .*
40. Cook, D.O., et al. 2023, MNRAS, 519, 3749. *Fraction of Stars in Clusters for the LEGUS Dwarf Galaxies.*
41. Luo, R., et al. 2023, MNRAS, 521, 6266. *Tracing the kinematics of the whole ram pressure stripped tails in ESO 137-001.*
42. Lofthouse, E., **Fumagalli, M.**, Fossati, M. et al. 2023, MNRAS, 518, 305. *MUSE Analysis of Gas around Galaxies (MAGG) – IV: The gaseous environment of  $z \approx 3 - 4$  Ly $\alpha$  emitting galaxies.*
43. Herzog, G., Benitez-Llambay, A. **Fumagalli, M.** 2023, MNRAS, 518, 6305. *The present-day gas content of simulated field dwarf galaxies.*
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## 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.*
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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.*