# 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- <b>Professor</b> , 6	University	of Milano	Bicocca.
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- 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**

- 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

- Nov., 2022 **IoA colloqium**, *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

- Insights into the CGM and ICM, IAP, France, invited. Jun., 2020 MUSE observations of the CGM of distant galaxies **Astronomy Colloquium**, Royal Observatory/Edinburgh, invited. Apr., 2020 Shedding light on gas around galaxies across cosmic times **Astronomy Colloquium**, *INAF/Arcetri*, invited. Mar., 2020 Shedding light on gas around galaxies across cosmic times Joint Astronomy Colloquium, MPA-MPE-ESO, invited. Dec., 2019 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 What Matter(s) Between Galaxies, Abbazia di Spineto, SOC. Jun., 2019 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 Twenty years of science at Bicocca, Milano-Bicocca University, invited review. Dec., 2018 Astrophysics  $\pm 20$ : Deeper, Sharper, and Bigger **CASTOR UV** space observatory, *The Royal Observatory Edinburgh*, invited review. Nov., 2018 The galaxy-IGM connection What Matter(s) Around Galaxies, Durham University, SOC/LOC co-chair. Jun., 2017 Probing the gaseous environment of star-forming galaxies in absorption and emission Seminar, Department of Physics, University of Milano-Bicocca, invited. Apr., 2017 MUS(E)ing over gas flows as drivers of galaxy evolution Cavendish Astrophysics Seminar, University of Cambridge, invited. May., 2016 Gas flows as fuel for star formation: a spotlight on strong absorption line systems Astronomy Seminar, ETH Zurich, invited. Apr., 2016 Gas flows as fuel for star formation: a spotlight on strong absorption line systems **Astronomy Seminar**, *Stockholm University*, invited. Mar., 2016 Gas flows as fuel for star formation: a spotlight on strong absorption line systems **Astronomy Seminar**, *INAF/Trieste*, invited. Sep., 2015 Gas flows as fuel for star formation: a spotlight on strong absorption line systems **IGM@50**, *INAF/Firenze*, invited. Jun., 2015 Probing gas flows near galaxies: a spotlight on Lyman Limit Systems Intergalactic Matters, MPIA, Heidelberg, invited. Jun., 2014 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	<b>Intergalactic Interactions</b> , <i>Higgs Centre</i> , <i>Edinburgh</i> , invited. Lyman limit systems and the circumgalactic medium at $z\sim 2-3$ .
Jun., 2013	<b>ENIGMA workshop</b> , <i>MPIA</i> , invited. Lyman limit systems and the circumgalactic medium at $z\sim 2-3$ .
Apr., 2013	<b>Lunch Talk</b> , Carnegie Observatories.  Beyond the disk: The role of halo gas in galaxy formation.
Mar., 2013	<b>Hubble Fellows Symposium</b> , <i>STScl</i> , <i>Baltimore</i> . Optically-thick hydrogen in the z=3 universe
Dec., 2012	University of Milano-Bicocca, Milan, invited. The gaseous environment of distant galaxies
Nov., 2012	<b>UT Astronomy Colloquium</b> , <i>Austin</i> , 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	<b>Metals in Tuscany</b> , <i>INAF/Firenze</i> , invited.  Pristine gas two billion years after the Big Bang
May., 2012	<b>Price Prize lecture</b> , <i>CCAPP Ohio State University</i> , invited. Cosmology with absorption line systems
Apr., 2012	<b>Astronomy Colloquium</b> , Osservatorio Astronomico di Brera, invited. Cosmology with absorption line systems
Mar., 2012	<b>Turbulence in Cosmic Structure Formation</b> , <i>Arizona State University</i> . 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	<b>219th AAS Meeting</b> , <i>Austin</i> , <i>TX</i> . Exploring the gas cycle in high-redshift galaxies: a joint effort of theory and observations
Dec., 2011	<b>Theory meeting of the Galaxy and Cosmology group</b> , <i>MPIA Heidelberg</i> . Probing inflow in high-redshift galaxies
Oct., 2011	<b>Theoretical Astrophysics Center seminar</b> , <i>UC Berkeley</i> , invited. Exploring the gas cycle in high-redshift galaxies: a joint effort of theory and observations
Oct., 2011	<b>Lunch Talk</b> , <i>Carnegie Observatories</i> .  Exploring the gas cycle in high-redshift galaxies: a joint effort of theory and observations
Oct., 2011	<b>Astronomy Tea Talk</b> , <i>Caltech</i> . 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	<b>Celebrating the career of A. Wolfe</b> , <i>Schloss Ringberg</i> , 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
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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)

- 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.

# Teaching and Advising

- 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. Georg Herzog (2020-), 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. Trystyn Berg (2021-), University of Milano-Bicocca.
    - Dr. Alejandro Benitez Llambay (2021-), University of Milano-Bicocca.
    - Dr. Alessia Longobardi (2021-), University of Milano-Bicocca.
    - Dr. Rajeshwari Dutta (2019-), Durham University, University of Milano-Bicocca.
    - Dr. Matteo Fossati (2018-2021), 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

- 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

## Refereed publications

- 1. Herzog, G., Benitez-Llambay, A. **Fumagalli, M.** 2023, MNRAS in press (arXiv:2209.11782). *The present-day gas content of simulated field dwarf galaxies.*
- 2. 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.*
- 3. Boselli, A. et al. 2022, A&A in press (arXiv:2211.01821). A Virgo Environmental Survey Tracing Ionised Gas Emission (VESTIGE).XIV. The main sequence relation in a rich environment down to  $M_{star} \approx 10^6~M_{\odot}$ .
- 4. Siressi, M. et al. 2022, AJ, 164, 208. CLusters in the UV as EngineS (CLUES). I. Survey Presentation and FUV Spectral Analysis of the Stellar Light.
- 5. Beckett, A., Morris, S.L., **Fumagalli, M.** et al. 2022, MNRAS 517, 1020. *Signatures of extended discs and outflows in the circumgalactic medium using the Q0107 quasar triplet.*
- 6. Mintz, A., Rafelski, M., Jorgenson, R.A., **Fumagalli, M.** 2022, AJ, 164, 51. *Constraining the Size of the Circumgalactic Medium Using the Transverse Autocorrelation Function of C IV Absorbers in Paired Quasar Spectra.*
- 7. Robert, P.F., Murphy, M.T., O'Meara, J.M, Crighton, N.H.M, **Fumagalli, M.** 2022, MNRAS, 514, 3559. *Discovery of three new near-pristine absorption clouds at* z=2.6-4.4.
- 8. Dalton, T., Morris, S.L., **Fumagalli, M.**, Gatuzz, E. 2022, MNRAS, 513, 822. *Probing the physical properties of the intergalactic medium using quasars.*
- 9. Welsh, L., Cooke, R., Fumagalli, M., Pettini, M.. 2022, ApJ, 929, 158. Oxygen-enhanced extremely metal-poor DLAs: A signpost of the first stars?
- 10. Lehner, N. et al. 2022, ApJ, 936, 156. KODIAQ-Z: Metals and Baryons in the Cool Intergalactic and Circumgalactic Gas at 2.2<z<3.6.

- 11. Arrigoni Battaia, F. et al. 2022, ApJ, 930, 72. A Multiwavelength Study of ELAN Environments (AMUSE<sup>2</sup>): Mass budget, satellites spin alignment and gas infall in a massive  $z\sim 3$  quasar host halo.
- 12. Pedrini, A. et al. 2022, MNRAS, 511, 5180. MUSE sneaks a peek at extreme rampressure stripping events V. Towards a complete view of the galaxy cluster A1367
- 13. Nowotka, M. et al. 2022, A&A, 658, 77. A Multiwavelength Study of ELAN Environments (AMUSE<sup>2</sup>): Ubiquitous dusty star-forming galaxies associated with enormous  $Ly\alpha$  nebulae on megaparsec scales.
- 14. Orozco-Duarte, R. et al. 2022, MNRAS, 509, 522. Synthetic photometry of OB star clusters with stochastically sampled IMFs: analysis of models and HST observations.
- 15. Benitez-Llambay, A., **Fumagalli, M.** 2021, ApJL, 921, 9. *The Tail of Late-Forming Dwarf Galaxies in ΛCDM*.
- 16. Dutta, R., **Fumagalli, M.**, Fossati, M. et al. 2021, MNRAS, 508, 4573. *Metal-enriched halo gas across galaxy overdensities over the last 10 billion years.*
- 17. Dalton, T., Morris, S.L., **Fumagalli, M.**, Gatuzz, E. 2021, MNRAS, 508, 1701. *Probing the physical properties of the intergalactic medium using blazars.*
- 18. Menon, S.H. et al. 2021, MNRAS, 507, 5542. The Dependence of the Hierarchical Distribution of Star Clusters on Galactic Environment.
- 19. Beckett, A., Morris, S.L., **Fumagalli, M.** et al. 2021, MNRAS, 506, 2574. The relationship between gas and galaxies at z < 1 using the Q0107 quasar triplet.
- 20. Della Bruna, L. et al., 2021, A&A, 650, 103. Studying the ISM at  $\sim 10$  pc scale in NGC 7793 with MUSE II. Constraints on the oxygen abundance and ionising radiation escape.
- 21. Fossati, M., **Fumagalli, M.**, Lofthouse, E.K. et al. 2021, MNRAS, 503, 3044. *MUSE Analysis of Gas around Galaxies (MAGG) III: The gas and galaxy environment of* z=3-4.5 quasars.
- 22. Dalton, T., Morris, S.L., **Fumagalli, M.**. 2021, MNRAS, 502, 5981. *Probing the physical properties of the intergalactic medium using gamma-ray bursts.*
- 23. Berg, T.A.M, **Fumagalli, M.**, D'Odorico, V. et al. 2021, MNRAS, 502, 4009. Subdamped Lyman alpha systems in the XQ-100 survey II Chemical evolution at 2.4 < z < 4.3.
- 24. Joshi, R., **Fumagalli, M.**, Srianand, R. et al. 2021, ApJ, 908, 129. *Discovery of a damped Ly\alpha galaxy at z*  $\sim$  3 towards the quasar SDSS J011852+040644.
- 25. Welsh, L., Cooke, R., Fumagalli, M.. 2021, MNRAS, 500, 5214. The stochastic enrichment of Population II stars.
- 26. Dutta, R., **Fumagalli, M.**, Fossati, M. et al. 2020, MNRAS, 499, 5022. *MUSE Analysis of Gas around Galaxies (MAGG) II: Metal-enriched halo gas around z 1 galaxies.*
- 27. Decataldo, D., Lupi, A., Ferrara, A., Pallottini, A. **Fumagalli, M.** 2020, MNRAS, 497, 4718. *Shaping the structure of a GMC with radiation and winds.*
- 28. **Fumagalli, M.**, Fotopoulou, S., Thomson, L. 2020, MNRAS, 498, 1951. *Detecting neutral hydrogen at* z>3 *in large spectroscopic surveys of quasars.*
- 29. Stott, J.P. et al. 2020, MNRAS, 497, 3083. Quasar Sightline and Galaxy Evolution (QSAGE) survey II. Galaxy overdensities around UV luminous quasars at z=1-2.
- 30. Bielby, R., **Fumagalli, M.**, Fossati, M. et al. 2020, MNRAS, 493, 5336. Into the Ly $\alpha$  jungle: exploring the circumgalactic medium of galaxies at  $z \sim 4-5$  with MUSE.

- 31. Cooke, R., Welsh, L., **Fumagalli, M.**, Pettini, M. 2020, MNRAS, 494, 4884. *A limit on Planck-scale froth with ESPRESSO.*
- 32. Welsh, L., Cooke, R., **Fumagalli, M.**, Pettini, M. 2020, MNRAS, 494, 1411. *A bound on the 12C/13C ratio in near-pristine gas with ESPRESSO.*
- 33. 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.
- 33. Buie, E., **Fumagalli, M.**, Scannapieco, E. 2020, 890, 33. *Interpreting Observations of Absorption Lines in the Circumgalactic Medium with a Turbulent Medium.*
- 34. 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 3.5.*
- 35. 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.*
- 36. 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.
- 37. 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.*
- 38. Becker, G.D. et al. 2019, ApJ, 883, 163. The Evolution of OI over 3.2 < z < 6.5: Reionization of the Circumgalactic Medium.
- 39. 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.
- 40. **Fumagalli, M.** 2019, Nature Astronomy, 3, 796. *Thirsty galaxies thriving on gas streams.*
- 41. Sykes, C., **Fumagalli, M.**, Cooke, R., Theuns, T., Benitez-Llambay, A. 2019, MNRAS, 487, 609. *Fluorescent rings in star-free dark matter haloes*.
- 42. 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  $Ly\alpha$  galaxies at  $z\sim3$ .
- 43. 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.*
- 44. Bielby, R.M. et al. 2019, MNRAS, 86, 21. Quasar Sightline and Galaxy Evolution (QSAGE) Survey I. The Galaxy Environment of OVI Absorbers up to z=1.4 around PKS 0232-04.
- 45. 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 $\alpha$  nebulae associated with a bright  $z \approx 3.23$  quasar pair.
- 46. Furniss, A., Worseck, G., **Fumagalli, M.** et al. 2019, AJ, 157, 41. *Spectroscopic Redshift of the Gamma-Ray Blazar B2 1215+30 from Lyα Emission*.
- 47. Cook, D.O. et al. 2019, MNRAS, 484, 4897. Star Cluster Catalogs for the LEGUS Dwarf Galaxies.

- 48. 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.
- 49. Grasha, K. et al. 2019, 483, 4707. The Spatial Relation between Young Star Clusters and Molecular Clouds in M 51 with LEGUS.
- 50. P. Frédéric Robert et al. 2019, MNRAS, 483, 2736. Exploring the origins of a new, apparently metal-free gas cloud at z=4.4.
- 51. Jauzac, M. et al. 2019, MNRAS, 483, 3082. The core of the massive cluster merger MACS J0417.5-1154 as seen by VLT/MUSE.
- 52. Arrigoni Battaia, F., Chen, C.-C., **Fumagalli, M.** et al. 2018, A&A, 620, 202. *Overdensity of submillimeter galaxies around the z=2.3 MAMMOTH-1 nebula.*
- 53. 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.
- 54. 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.
- 55. 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.*
- 56. Cooke, R. & **Fumagalli, M.** 2018, Nature Astronomy, 2, 957. *Measurement of the primordial helium abundance from the intergalactic medium.*
- 57. Krogager, J.-K. et al. 2018, A&A, 619, 142. Dissecting cold gas in a high-redshift galaxy using a lensed background quasar.
- 58. Grasha, K. et al. 2018, MNRAS, 481, 1016. Connecting Young Star Clusters to CO Molecular Gas in NGC 7793 with ALMA-LEGUS.
- 59. Ashworth, G., **Fumagalli, M.**, Adamo, A., Krumholz, M.R. 2018, MNRAS, 480, 3091A. *Theoretical predictions for IMF diagnostics in UV spectroscopy of star clusters.*
- 60. 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.
- 61. 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.
- 62. Chehade, B. et al. 2018, MNRAS, 478, 1649. Two more, bright, z>6 quasars from VST ATLAS and WISE .
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# Non-refereed publications

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