

# CURRICULUM VITAE

## Alessandro Lupi

**Current Address:** Università degli Studi dell'Insubria  
via Valleggio 11  
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### Research Interests:

- *Black Holes*
  - Massive black hole formation mechanisms
  - Black hole growth across cosmic times
  - Massive black hole binary formation and evolution
  - Tidal disruption events
- *Galaxies*
  - Galaxy formation and evolution
  - Cosmic dawn and reionization
- *Interstellar medium and star formation*
  - Star formation in filaments and proto-stellar cores
  - Chemistry of the interstellar medium, and line emission

**Education:** Ph.D. in Astronomy and Astrophysics,  
University of Insubria 2015  
Thesis: *Black holes in galactic nuclei: seed formation from stellar mass black holes and massive black hole pairing in galaxy mergers*

MS (cum laude) in Astrophysics and Space Physics,  
University of Milano Bicocca 2012  
Thesis: *Black hole formation in the Universe at high redshift*

Bachelor (cum Laude) in Physics,  
University of Milano Bicocca 2010  
Thesis: *Techniques for dark matter detection through bubble formation*

### Employments:

Post-doctoral Fellow at Institut d'Astrophysique de Paris (Paris, France) 2015- 2018  
Post-doctoral Fellow at Scuola Normale Superiore (Pisa, Italy) 2018- 2020  
Research Fellow at Università degli Studi di Milano-Bicocca (Milan, Italy) 2020- 2023  
Assistant Professor at Università degli Studi dell'Insubria (Como, Italy) 2023- now

## Teaching:

-Teaching assistant for the course of Electromagnetism II and Special Relativity at University of Insubria (Undergraduate level)	2013-2014
-Teaching assistant for the course of Electromagnetism I at University of Insubria (Undergraduate level)	2014-2015
-Lecture series on computational astrophysics (for Master and Ph.D. students) at Universidad de Concepción (Chile)	05/2018
-Lecturer for the course of Computational Astrophysics at University of Insubria (Master level)	2020-now
-Teaching assistant for the Computer Science Lab course (Undergraduate level) at University of Milano-Bicocca	2020-now
-Teaching assistant for the Applied Physics course (Undergraduate level) at University of Milano-Bicocca	2020-now
-Lecturer for the PhD course on Astrophysical black holes: formation and evolution at University of Milano-Bicocca	2021

## Supervision of undergraduate students:

(Co-supervisor) Maria Cristina Fortuna, University of Milano Bicocca	2013
(Co-supervisor) Matteo Zoccolan, University of Milano Bicocca	2015
(Co-supervisor) Matteo Muriano, University of Milano Bicocca	2022

## Supervision of master students:

(Co-supervisor) Hugo Pfister, Institut d'Astrophysique de Paris	2016
(Co-supervisor) Elia Cenci, University of Milano Bicocca	2019-2020
(Co-supervisor) Luca Sala, University of Milano Bicocca	2019-2020
(Co-supervisor) Simón Ferrada-Chamorro, Universidad de Concepción	2019-2020
(Co-supervisor) Luis Gonzalez, Universidad de Concepción	2021
(Co-supervisor) Nicol Gutiérrez, Universidad de Concepción	2020-2022
Tommaso Clementi, University of Milano Bicocca	2021-2022
(Co-supervisor) Simona Pacuraru, University of Milano Bicocca	2021-2022
(Co-supervisor) Fabiola Cocchiararo, University of Milano Bicocca	2021-2022
(Co-supervisor) Gonzalo Latrille, Universidad de Concepción	2022-now
(Co-supervisor) Daniel Gaete, Universidad de Concepción	2022-now
(Co-supervisor) Sebastian Aguilar Castillo, Universidad de Concepción	2022-now

## Supervision/mentoring of Ph.D. students:

(Co-supervisor) Patricio Avila, Universidad de Concepción	2020-now
(Co-supervisor) Francesco Bollati, University of Insubria	2020-now

## Professional activities:

Reviewer for "Monthly Notices of the Royal Astronomical Society" (MNRAS)
Reviewer for "Astrophysical Journal" (ApJ)
Reviewer for "Astronomy & Astrophysics" (A&A)
Reviewer for "Publications of the Astronomical Society of Japan" (PASJ)

Reviewer for “Nature” (Nat)  
Reviewer for “DIRAC Resource Allocation Committee”

### Memberships:

AGORA collaboration for galaxy simulations	2014-now
Istituto Nazionale di Astrofisica (INAF)	2019-now
Istituto Nazionale di Fisica Nucleare (INFN)	2021-now
LISA Consortium (Astrophysics Working Group & AstroBlack Italy)	2018-now
VESTIGE collaboration (PI: A. Boselli @ LAM)	2020-now
EREBUS collaboration (a combined JWST and ALMA large program, PI: X. Fan)	2022-now

### Computer skills:

<i>N-body/Hydro codes:</i>	GADGET2/3/4, RAMSES, ENZO, GIZMO, LEMONGRAB
<i>Operating Systems:</i>	Linux, Unix, Windows, Mac OS
<i>Programming:</i>	Fortran77, Fortran90, C, C++/#, Objective C, HTML, Visual Basic 6/.NET, ASP, PHP, Python, Julia
<i>Specific software:</i>	TIPSY, SPLASH, PYMSES, YT, MATLAB, PYNBODY

## ACADEMIC REFERENCES

### Monica Colpi

Department of Physics G.Occhialini  
University of Milano Bicocca Milan, 20126, Italy  
*E-mail:* monica.colpi@unimib.it

### Massimo Dotti

Department of Physics G.Occhialini  
University of Milano Bicocca Milan, 20126, Italy  
*E-mail:* massimo.dotti@unimib.it

### Francesco Haardt

Department of Science and Hi-tech  
University of Insubria (Como) Como,  
22100, Italy  
*E-mail:* francesco.haardt@uninsubria.it

### Andrea Ferrara

Scuola Normale Superiore  
Pisa, 56126, Italia  
*E-mail:* andrea.ferrara@sns.it

### Marta Volonteri

Institut d’Astrophysique de Paris  
Paris, 75014, France  
*E-mail:* martav@iap.fr

### Joseph Silk

Institut d’Astrophysique de Paris  
Paris, 75014, France  
*E-mail:* silk@iap.fr

## SCHOOLS, MEETINGS & CONFERENCES

### Invited talks:

*Guillermo Haro workshop 2015: Forming and fueling supermassive black hole seeds*

Location: Tonantzintla, Puebla (Mexico), date: 6-24 July 2015

*Dense stellar environments as a probe of astrophysics and general relativity: what we can learn from the first GW detection?*

Location: Benasque (Spain), date: 5-18 June 2016

### YAGN 2017

Location: Teruel (Spain), date: 23-25 October 2017

### *The early growth of supermassive black holes*

Location: Sesto (Italia), date: 2-6 July 2018

### YAGN 2018

Location: Budapest (Hungary), date: 29-31 October 2018

### YAGN 2020

Location: Copenhagen (Denmark)/Online meeting, date: 28-30 October 2020

### *SMBH conference - Formation, growth and evolution*

Location: Pucon (Chile)/Online meeting, date: 7-11 December 2020

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

Location: Sesto (Italia), date: 23-27 January 2023

## **Contributed talks:**

### *PhD school Lucchin: Exoplanets and The dark side of the Universe*

Location: Asiago (Italy), date: 24-28 June 2013

### *The Unquiet Universe*

Location: Cefalù (Italy), date: 2-7 June 2014

### *AGN11 - Where Black Holes and Galaxies Meet*

Location: Trieste (Italy), date: 23-26 September 2014

### *Santa Cruz Galaxy workshop 2015*

Location: Santa Cruz, California (USA), date: 17-21 August 2015

### *European Week of Astronomy and Space Science (EWASS2017)*

Location: Prague (Czech Republic), date: 26-30 June 2017

### *Current and future perspectives of chemical modelling in astrophysics*

Location: Hamburg (Germany), date: 17-19 July 2017

### *The role of gas in galaxy dynamics*

Location: La Valette (Malte), date: 2-6 October 2017

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

Location: Paris (France), date: 25-29 June 2018

### *LISA Astrophysics working group meeting*

Location: Paris (France), date: 12-14 December 2018

### *Zoom-In and Out: From the Interstellar Medium to the Large Scale Structure of the Universe*

Location: Stockholm (Sweden), date: 3-28 June 2019

### *Views on the interstellar medium in galaxies in the ALMA era*

Location: Bologna (Italy), date: 2-6 September 2019

### *Sexten workshop: The interstellar medium of high-redshift galaxies*

Location: Sexten (Italy), date: 13-17 January 2020

### YAGN 2021

Location: Copenhagen (Denmark), date: 1-3 September 2021

### *Origin, growth and feedback of black holes in dwarf galaxies*

Location: San Sebastian (Spain), date 12-16 September 2022

### *Cosmic Rays 2: the salt of the star formation recipe*

Location: Florence (Italy), date: 10-12 November 2022

## Posters:

*Cosmic dawn of galaxy formation: linking theory and observations with new-generation spectral models*

Location: Paris (France), date: 20-24 June 2016

*European Week of Astronomy and Space Science (EWASS2017)*

Location: Prague (Czech Republic), date: 26-30 June 2017

## INVITED SEMINARS

Durham University, Durham (UK), March 2016

University of Maryland (USA), October 2016

University of Milano Bicocca (Italy), July 2017

Institute of Computational Science, University of Zurich (Switzerland), November 2017

MPE Garching (Germany), December 2018

University of Concepción (Chile), May 2018

University of Chile (Chile), May 2018

EPFL (Switzerland), October 2018

Osservatorio Astronomico di Brera (Italy), January 2019

KICC Cambridge (UK), April 2019

Albert Einstein Institute (Germany), May 2019

University of Concepción (Chile), July 2020

Osaka University (Japan), October 13th, 2021 (online)

University of Kentucky (USA), October 20th, 2021 (online)

ESO (Germany), November 2nd, 2021 (online)

OAS Bologna (Italy), November 12th, 2021 (online)

NRC Herzberg Center (Canada), March 29th, 2022 (online)

NYU Abu Dhabi (UAE), December 7th, 2022

University of Padova, December 21st, 2022

## GRANTS/AWARDS

- PhD Fellowship by University of Insubria for 3 years 11/2012-10/2015
- CO-I of the **PRIN-INAF** “Star formation and evolution in galactic nuclei” (PI M. Mapelli, INAF-OAPd), awarded **32k EUR for 2 years (2015-2016)** 2014
- Visiting fellowship funded by the Balzan foundation in the program “Centre for Cosmological Studies”, to visit Johns Hopkins University, awarded **~3000 GBP for October 2016** 2016
- CO-I of the **Conicyt Anillo** project “Formation and growth of supermassive black holes” (PI: D. Schleicher, Universidad de Concepción), awarded **~475k EUR for 3 years (2018-2020)**. 2017
- Seal of Excellence from the EU within the Horizon2020 program for the proposal “GALAGNFESC” submitted to the MSCA action 2017
- CO-I of the **PRIN INAF** “Sub-parsec resolution simulations of globular clusters in a cosmological model” (PI F. Calura, INAF-OAS), awarded **~66k EUR for 2 years (2021-2022)** 2020

## ACCEPTED COMPUTATIONAL PROPOSALS

- **PI** of the proposal “Massive Black Hole Binary Formation in gas rich nuclei” at CINECA, **50k CPU hours** awarded for SPH/AMR simulations on the EURORA cluster 2013
- **PI** of the proposal “Massive Black Hole growth and feedback in galaxy mergers” at CINECA, **150k CPU hours** awarded for AMR simulations on the PLX2 cluster 2014
- **PI** of the proposal “Fast growth of stellar mass black holes via phases of super-critical accretion” at CINECA, **200k CPU hours** awarded for AMR simulations on the GALILEO cluster 2015
- CO-I of the PRACE proposal “Instabilities of galaxy disks in highly scalable cosmological simulations” (PI M. Dotti, University of Milano Bicocca), **100k CPU hours** awarded to test the scalability up to thousands of cpus of the code Changa, as a preparatory step to very large box cosmological simulations 2016
- CO-I of the proposals “The cosmic evolution of massive black holes” at GENCI, **11.7M CPU hours** awarded for numerical simulations on the OCCIGEN 2017  
**19.64M CPU hours** awarded for numerical simulations on the OCCIGEN and IRENE machines 2018  
**11.3M CPU hours** awarded for numerical simulations on the OCCIGEN, IRENE, and Jean Zay machines 2019
- **PI** of the proposal “The impact of AGN feedback onto the ISM of high-redshift galaxies” at CINECA, **2M CPU hours** awarded for numerical simulations on the GALILEO2 machine 2019
- CO-I of the proposals “The cosmic evolution of massive black holes” at GENCI, **7M CPU hours** awarded for numerical simulations on the OCCIGEN and IRENE machines 2020  
**6.8M CPU hours** awarded for numerical simulations on the IRENE machines 2021
- CO-I of the PRACE proposal “Towards a holistic view of the origin of multiple stellar populations in globular clusters” (PI: E. Lacchin, INAF-OAS), **14M CPU hours** awarded for numerical simulations of the formation and evolution of stellar populations in globular clusters 2022

## ORGANISATION OF CONFERENCES

- Member of the Steering Committee of the workshop “Young Astronomers on Galactic Nuclei” (YAGN) for young astronomers working on MBHs, held at the Institut d’Astrophysique de Paris. November 17-18, 2016
- Member of the local organising committee for the conference “Massive black holes in evolving galaxies: from quasars to quiescence” held at the Institut d’Astrophysique de Paris June 25-29, 2018
- Member of the local and scientific organising committees for the conference “The interstellar medium of high-redshift galaxies” held at the Sexten Center for Astrophysics January 13-17, 2020

## PUBLICATION LIST

### Accepted publications:

1. *Constraining the high redshift formation of black hole seeds in nuclear star clusters with gas inflows*, **A. Lupi**, M. Colpi, B. Devecchi, G. Galanti and M. Volonteri, 2014, MNRAS, 442, 3616
2. *Massive black hole and gas dynamics in galaxy nuclei mergers. I. Numerical implementation*, **A. Lupi**, F. Haardt and M. Dotti, 2015, MNRAS, 446, 1765-1774
3. *Massive black hole and gas dynamics in galaxy nuclei mergers. II. Black hole pairing and binary formation*, **A. Lupi**, F. Haardt, M. Dotti and M. Colpi, 2015, MNRAS, 453, 3437-3446
4. *Growing massive black holes through supercritical accretion of stellar-mass seeds*, **A. Lupi**, F. Haardt, M. Dotti, D. Fiacconi, L. Mayer and P. Madau, 2016, MNRAS, 456, 2993-3003
5. *Hydrodynamical simulations of the tidal stripping of binary stars by massive black holes*, D. Mainetti, **A. Lupi**, S. Campana and M. Colpi, 2016, MNRAS, 457, 2516-2529
6. *Clumpy Disks as a Testbed for Feedback-regulated Galaxy Formation*, L. Mayer, V. Tamburello, **A. Lupi**, B. Keller, J. Wadsley and P. Madau, 2016, ApJL, 830, L13
7. *The AGORA High-Resolution Galaxy Simulations Comparison Project. II: Isolated Disk Test*, J. Kim, O. Agertz, R. Teyssier, M. J. Butler, D. Ceverino, J.H. Choi, R. Feldmann, B. W. Keller, **A. Lupi**, and the other AGORA collaboration members, 2016, ApJ, 833, 2
8. *The fine line between total and partial tidal disruption events*, D. Mainetti, **A. Lupi**, S. Campana and M. Colpi, 2017, A&A, 600, A124
9. *Young and turbulent: the wild early life of today's most massive galaxies*, D. Fiacconi, L. Mayer, P. Madau, **A. Lupi**, M. Dotti and F. Haardt, 2017, MNRAS, 467, 4080-4100
10. *Simplified galaxy formation with mesh-less hydrodynamics*, **A. Lupi**, M. Volonteri and J. Silk, 2017, MNRAS, 470, 1673-1686
11. *The birth of a supermassive black hole binary*, H. Pfister, **A. Lupi**, P. R. Capelo, M. Volonteri, J. Bellovary and M. Dotti, 2017, MNRAS, 471, 3646
12. *Massive Black Holes from Dissipative Dark Matter*, G. D'Amico, P. Panci, **A. Lupi**, S. Bovino and J. Silk, 2018, MNRAS, 473, 1
13. *The natural emergence of the correlation between H2 and star formation rate surface densities in galaxy simulations*, **A. Lupi**, S. Bovino, P. R. Capelo, M. Volonteri and J. Silk, 2018, MNRAS, 474, 2884
14. *The effect of non-equilibrium metal cooling on the interstellar medium*, P. R. Capelo, S. Bovino, **A. Lupi**, D. R. G. Schleicher and T. Grassi, 2018, MNRAS, 475, 3283

15. *The momentum budget of clustered supernova feedback in a 3D, magnetised medium*, E. S. Gentry, M. R. Krumholz, P. Madau, and **A. Lupi**, 2019, MNRAS, 483, 3647
16. *H2 chemistry in galaxy simulations: an improved supernova feedback model*, **A. Lupi**, 2019, MNRAS, 484, 1687
17. *Black hole formation in the context of dissipative dark matter*, M. A. Latif, **A. Lupi**, D. R. G. Schleicher, G. D'Amico, P. Panci, and S. Bovino, 2019, MNRAS, 485, 3352
18. *Super-Eddington Accretion and Feedback from the First Massive Seed Black Holes*, J. A. Regan, T. P. Downes, M. Volonteri, R. Beckmann, **A. Lupi**, M. Trebitsch, and Y. Dubois, 2019, MNRAS, 486, 3892
19. *Barred galaxies in cosmological zoom-in simulations: the importance of feedback*, T. Zana, P. R. Capelo, M. Dotti, L. Mayer, **A. Lupi**, F. Haardt, S. Bonoli, and S. Shen, 2019, MNRAS, 488, 1864
20. *High-redshift quasars and their host galaxies I: kinematical and dynamical properties and their tracers*, **A. Lupi**, M. Volonteri, R. Decarli, S. Bovino, J. Silk, and J. Bergeron, 2019, MNRAS, 488, 4004
21. *The 3D Structure of CO Depletion in High-mass Prestellar Regions*, S. Bovino, S. Ferrada-Chamorro, **A. Lupi**, G. Sabatini, A. Giannetti, and D. R. G. Schleicher, 2019, ApJ, 887, 224
22. *Difficulties in mid-infrared selection of AGNs in dwarf galaxies*, **A. Lupi**, T. Sbarrato, and S. Carniani, 2020, MNRAS, 492, 2528
23. *The [CII]-SFR correlation in dwarf galaxies across cosmic time*, **A. Lupi** and S. Bovino, 2020, MNRAS, 492, 2818
24. *Globular Cluster Formation from Colliding Substructure*, P. Madau, **A. Lupi**, J. Diemand, A. Burkert, and D. N. C. Lin, 2020, ApJ, 890, 18
25. *Dynamical friction-driven orbital circularization in rotating discs: a semi-analytical description*, M. Bonetti, E. Bortolas, **A. Lupi**, M. Dotti, and S. I. Raimundo, 2020, MNRAS, 494, 3053
26. *A new proxy to estimate the cosmic ray ionization rate in dense cores*, S. Bovino, S. Ferrada-Chamorro, **A. Lupi**, D. R. G. Schleicher, and P. Caselli, 2020, MNRAS, 495, L7
27. *Predicting FIR lines from simulated galaxies*, **A. Lupi**, A. Pallottini, A. Ferrara, S. Bovino, S. Carniani, and L. Vallini, 2020, MNRAS, 496, 5160
28. *Shaping the structure of a GMC with radiation and winds*, D. Decataldo, **A. Lupi**, A. Ferrara, A. Pallottini, and M. Fumagalli, 2020, MNRAS, 497, 4718
29. *Missing [C II] emission from early galaxies*, S. Carniani, A. Ferrara, R. Maiolino, M. Castellano, S. Gallerani, A. Fontana, M. Kohandel, **A. Lupi**, A. Pallottini, L. Pentericci, L. Vallini, E. Vanzella, 2020, MNRAS, 499, 5136

30. *Constraints on the [C II] luminosity of a proto-globular cluster at  $z \sim 6$  obtained with ALMA*, F. Calura, E. Vanzella, S. Carniani, R. Gilli, P. Rosati, M. Meneghetti, R. Paladino, R. Decarli, M. Brusa, **A. Lupi**, Q. D'Amato, P. Bergamini, G. B. Caminha, 2021, MNRAS, 500, 3083
31. *Black hole spin evolution in warped accretion discs*, E. Cenci, L. Sala, **A. Lupi**, P. R. Capelo, M. Dotti, 2021, MNRAS, 500, 3719
32. *Non-isotropic feedback from accreting spinning black holes*, L. Sala, E. Cenci, P. R. Capelo, **A. Lupi**, M. Dotti, 2021, MNRAS, 500, 4788
33. *A Virgo Environmental Survey Tracing Ionised Gas Emission (VESTIGE).IX. The effects of ram pressure stripping down to the scale of individual HII regions in the dwarf galaxy IC 3476*, A. Boselli, **A. Lupi** et al., 2021, A&A, 646, A139
34. *Dynamical evolution of massive perturbers in realistic multi-component galaxy models I: implementation and validation*, M. Bonetti, E. Bortolas, **A. Lupi**, and M. Dotti, 2021, MNRAS, 502, 3554
35. *Forming massive seed black holes in high-redshift quasar host progenitors*, **A. Lupi**, Z. Haiman, and M. Volonteri, 2021, MNRAS, 503, 5046
36. *Chemical post-processing of magneto-hydrodynamical simulations of star-forming regions: robustness and pitfalls*, S. Ferrada-Chamorro, **A. Lupi**, and S. Bovino, 2021, MNRAS, 505, 3442
37. *The AGORA High-resolution Galaxy Simulations Comparison Project. III: Cosmological Zoom-in Simulation of a Milky Way-mass Halo*, S. Roca-Fàbrega, J.-H. Kim et al. (including **A. Lupi**) on behalf of the AGORA Collaboration, ApJ, 2021, 917, 64
38. *Unveiling the gravitational universe at  $\mu$ -Hz frequencies*, A. Sesana, N. Korsakova et al. (including **A. Lupi**), 2021, Experimental Astronomy
39. *Chemical analysis of prestellar cores in Ophiuchus yields short timescales and rapid collapse*, S. Bovino, **A. Lupi**, A. Giannetti, G. Sabatini, D. R. G. Schleicher, F. Wyrowski, and K. M. Menten, 2021, A&A, 654, A34
40. *On the low ortho-to-para H<sub>2</sub> ratio in star-forming filaments*, **A. Lupi**, S. Bovino, and T. Grassi, 2021, A&A Letters, 654, L6
41. *High-redshift quasars and their host galaxies II: multiphase gas and stellar kinematics*, **A. Lupi**, M. Volonteri, R. Decarli, S. Bovino, and J. Silk, MNRAS, 2022, 510, 5760
42. *Resolving Massive Black Hole Binary Evolution via Adaptive Particle Splitting*, A. Franchini, **A. Lupi**, and A. Sesana, ApJL, 2022, 929, L13
43. *The role of bars on the dynamical-friction-driven inspiral of massive objects*, E. Bortolas, M. Bonetti, M. Dotti, **A. Lupi**, P. R. Capelo, L. Mayer, and A. Sesana, MNRAS, 2022, 512, 3365

44. *The evolution of the barred galaxy population in the TNG50 simulation*, Y. Rosas-Guevara, S. Bonoli, M. Dotti, D. Izquierdo-Villalba, **A. Lupi**, T. Zana, M. Bonetti, D. Nelson, V. Springel, L. Hernquist, and M. Vogelsberger, MNRAS, 2022, 512, 5339
45. *Enhanced star formation in  $z\sim 6$  quasar companions*, T. Zana, S. Gallerani, S. Carniani, F. Vito, A. Ferrara, **A. Lupi**, F. Di Mascia, and P. Barai, MNRAS, 2022, 513, 2118
46. *Maximally informed Bayesian modelling of disc galaxies*, F. Rigamonti, M. Dotti, S. Covino, F. Haardt, M. Landoni, W. Del Pozzo, **A. Lupi**, and S. Zibetti, MNRAS, 2022, 513, 6111
47. *Disc instability and bar formation: view from the IllustrisTNG simulations*, D. Izquierdo-Villalba, S. Bonoli, Y. Rosas-Guevara, V. Springel, S. D. M. White, T. Zana, M. Dotti, D. Spinoso, M. Bonetti, and **A. Lupi**, MNRAS, 2022, 514, 1006
48. *Morphological decomposition of TNG50 galaxies: methodology and catalogue*, T. Zana, **A. Lupi**, M. Bonetti, M. Dotti, Y. Rosas-Guevara, D. Izquierdo-Villalba, S. Bonoli, L. Hernquist, and D. Nelson, MNRAS, 2022, 515, 1524
49. *Sub-parsec resolution cosmological simulations of star-forming clumps at high redshift with feedback of individual stars*, F. Calura, **A. Lupi**, J. Rosdahl, E. Vanzella, M. Meneghetti, P. Rosati, E. Vesperini, E. Lacchin, R. Pascale, and R. Gilli, MNRAS, 2022, 516, 5914
50. *Optical follow-up of the tick-tock massive black hole binary candidate*, M. Dotti, M. Bonetti, F. Rigamonti, E. Bortolas, M. Fossati, R. Decarli, S. Covino, **A. Lupi**, A. Franchini, A. Sesana, and G. Calderone, MNRAS, 2022, in press (stac3344)
51. *Non-ideal magneto-hydrodynamics of self-gravitating filaments*, N. Gutiérrez-Vera, T. Grassi, S. Bovino, **A. Lupi**, D. Galli, and D. R. G. Schleicher, A&A, 2022, in press (doi:10.1051/0004-6361/202243493; not yet on NASA/ADS)
52. *A general relativistic extension to mesh-free methods for hydrodynamics*, **A. Lupi**, MNRAS, 2023, 519, 1115
53. *Dynamical evolution of massive black hole pairs in the presence of spin-dependent radiative feedback*, F. Bollati, **A. Lupi**, M. Dotti, and F. Haardt, MNRAS, 2023, in press