

CONTACT INFORMATION

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PERSONAL INFORMATION

Date of birth: 28 July 1980. *Citizenship:* Italian. *Marital status:* Married.

RESEARCH INTERESTS

Cosmic Structure Formation - Intergalactic medium and Galaxy Formation – Ly α and continuum Radiative Transfer – Ly α emission modeling and observations – Hydrogen and Helium Reionization.

EMPLOYMENT

- 2020 -** Full Professor (Professore Ordinario), Università degli Studi di Milano Bicocca.
- 2016 - 2021** SNF Professor and Group Leader, Cosmic Structure Formation Group.
Institute for Particle Physics and Astrophysics, Department of Physics, ETH Zurich.
- 2014 - 2016** Research Team Leader (“Oberassistent”).
Institute for Astronomy, Department of Physics, ETH Zurich, Switzerland.
- 2011 - 2014** IMPS Postdoctoral Fellow.
Department of Astronomy and Astrophysics, University of California, Santa Cruz, USA.
- 2008 - 2011** Postdoctoral Research Associate.
Institute of Astronomy and Kavli Institute for Cosmology, Cambridge, UK.

EDUCATION

- 09/2008** PhD in Astrophysics. Institute for Astronomy, Department of Physics, ETH Zurich.
Advisors: Simon J. Lilly, Cristiano Porciani.
- 03/2003** Laurea degree (roughly equivalent to M.Sc.) in Astronomy. Università degli studi di Padova, Italy. Full marks (Summa cum Laude). *Advisor:* Giuseppe Tormen.

AWARDS AND FELLOWSHIPS (SELECTED)

- 2019** European Research Council (ERC) Consolidator Award.
- 2019** SNSF Professorship Prolongation Award, Swiss National Science Foundation.
- 2019** Italian National Scientific Habilitation (ASN) as Full and Associate Professor (“I e II fascia”).
- 2016** SNSF Professorship Award, Swiss National Science Foundation.
- 2014** *Physics World* Top Ten Breakthroughs in Physics.
- 2011** Lyman Spitzer Fellowship, Princeton University [declined]
- 2011** Karl Schwarzschild Fellowship, Leibniz Institute for Astrophysics Potsdam [declined]
- 2011** Beecroft Fellowship, University of Oxford [declined]
- 2011** CITA Fellowship, Canadian Institute for Theoretical Astrophysics [declined]
- 2011** NOVA Fellowship, University of Leiden [declined]
- 2011** IMPS Fellowship, University of California Santa Cruz.
- 2003** Summa cum Laude, Padua University (Italy).

PI GRANTS [~4,8M EURO]

- 2022 - 2026** Bando FARE2020, “Unveiling the most massive nodes in the Cosmic Web”, **320k EUR**

- 2020 - 2026** ERC Consolidator Grant “CosmicWeb”, **2M EUR**.
- 2020 - 2025** Fondazione Cariplo, “Multi-wavelength study of a massive Cosmic Web node” **330k EUR**.
- 2020 - 2022** SNSF, “From Cosmic Web to Galaxies: illuminating the gaseous link between the dark and the bright Universe”, **~535k EUR (584k CHF)**.
- 2016 - 2020** SNSF, “From Cosmic Web to Galaxies: illuminating the gaseous link between the dark and the bright Universe”, **~1,4M EUR (1,563M CHF)**.
- 2013** HST, “Illuminating the Dark Phases of Galaxy-Formation with the Help of a $z = 2.4$ Quasar”, **~100k EUR (111k USD)**.
- 2013** HST, “The environment of the $z=7.085$ QSO ULAS J1120+0641”, **~70k EUR (80k USD)**.

PUBLICATIONS (QUANTITATIVE SUMMARY)

135 refereed journal publications plus monographs as of March 2025, including:

- 11 publications and monographs as first author (including 1 in *Nature*);
- 25 papers with directly advised students and postdocs (17 of which as second author);
- 14 other papers as second, third, or fourth author;
- 6 papers published in *Nature* or *Science* (1 as first author) and 3 in *Nature Astronomy*.
- more than 7,000 citations (ADS, Astrophysics Data System database), of which more than 4,000 received in the last 5 years; h-index: 47 (ADS). More than 9,000 citations in the Google Scholar database (of which 6,000 in the last 5 year), h-index: 54.

CODE DEVELOPING

- RADAMESH** Cosmological Radiative Transfer for Adaptive Mesh Refinement simulations (Cantalupo & Porciani 2011); 15000+ Fortran2003 and C code lines; object-oriented.
- CubExtractor** Data reduction, object extraction, detection and analysis package for three-dimensional datasets, e.g. VLT/MUSE and Keck/KCWI datacubes (Cantalupo, in prep; Cantalupo et al. 2019); 14,000+ Fortran2003 code lines; object-oriented.

TELESCOPE TIME ALLOCATIONS (SELECTED) [**>4000 HOURS INCLUDING GTO**]

- VLT-MUSE** executive-board member of the **Guaranteed Time of Observations (GTO)** Team, **2,300 hours** (over 5 years from September 2014), including proposals as **PI**.
- ESO/VLT** **>1,500 hours** as PI or Co-I of more than 70 successful proposals.
- JWST** **24.5 hours** as PI in Cycle 1 (NIRSpec).
- Chandra** **650ks** as PI in Cycle 23.
- ALMA** **45 hours** as PI in Cycle 8.
- HST** **300 orbits** as PI or Co-I (COS, ACS/WFC, WFC3)
- Keck** **>16 nights** as science PI or main Co-I (LRIS, MOSFIRE and KCWI).
- Gemini** **120 hours** as PI (GMOS)
- Other** Co-I of several successful proposals on: Subaru, Chandra, IRAM/NOEMA.

TEACHING EXPERIENCE

- 2022 - 2024** Cosmic Structure Formation, Università degli Studi di Milano Bicocca.
- 2022 - 2024** Laboratory of Data Analysis, Università degli Studi di Milano Bicocca.
- 2020 - 2021** Laboratory of Astrophysics, Università degli Studi di Milano Bicocca.

2018 - 2019 Cosmic Structure Formation and Radiation Processes, ETH Zurich.
2017 Radiation Processes in Astrophysics, ETH Zurich.
2016 Astrophysics II, Department of Physics, ETH Zurich (substitute lecturer).
2015 Hot Topics in Astrophysics, Department of Physics, ETH Zurich.
2015 Physics II, Department of Physics, ETH Zurich (substitute lecturer).
2013 - 2014 Workshop for Engineering and Science Transfers, UCSC.
2013 - 2014 Teaching through Inquiry Workshop, ISEE, UCSC (participant).
2004 - 2008 Teaching Assistant for: Physics I, II, Astrophysics I, II and Galaxy Formation, ETH Zurich.

ADVISED STUDENTS (MASTER AND PHD) AND POSTDOCS [33]

2024 - Nicolas Ledos, Postdoc, Università degli Studi di Milano Bicocca.
2024 - Giorgia Biamonti, Master student, Università degli Studi di Milano Bicocca.
2023 - Giada Quadri, PhD Student, Università degli Studi di Milano Bicocca.
2022 - Weichen Wang, Postdoc, Università degli Studi di Milano Bicocca.
2021 - Marta Galbiati, PhD student, Università degli Studi di Milano Bicocca.
2021 - Titouan Lazeyras, Postdoc, Università degli Studi di Milano Bicocca.
2021 - Antonio Pensabene, Postdoc, Università degli Studi di Milano Bicocca.
2021 - Andrea Travascio, Postdoc, Università degli Studi di Milano Bicocca.
2024 - 2025 Alejandra Yrupe Fresco Arrom, Postdoc, Università degli Studi di Milano Bicocca.
2023 - 2024 Alice Colella, Master student, Università degli Studi di Milano Bicocca.
2023 - 2024 Federico Baraggioni, Master Student, Università degli Studi di Milano Bicocca.
2021 - 2022 Alberto Mornata, Master student, Università degli Studi di Milano Bicocca.
2021 - 2022 Gabriele Galizzi, Master student, Università degli Studi di Milano Bicocca.
2020 - 2024 Stephanie de Beer, PhD student, Università degli Studi di Milano Bicocca.
2019 - 2020 Rafael Ottersberg, Master student, Cosmic Structure Formation Group, ETH.
2019 - 2020 Yuzheng Kang, Master student, Cosmic Structure Formation Group, ETH.
2019 - 2020 Bastien Duboeuf, Master student, Cosmic Structure Formation Group, ETH & Ecole Normale Supérieure Paris (internship “Pre-doctoral year abroad” program).
2019 - 2020 Stephanie de Beer, Master student, Cosmic Structure Formation Group, ETH.
2019 - 2020 Jocelyne Bisagny, Graduate Research Assistant, Cosmic Structure Formation Group, ETH.
2018 - 2020 Vivienne Langen, Master student, Cosmic Structure Formation Group, ETH & Caltech.
2018 - 2019 Jakob Den Brok, Master student, Cosmic Structure Formation Group, ETH.
2018 - 2018 Julien Gacon, Master student, Cosmic Structure Formation Group, ETH.
2017 - 2018 Marius Tresoldi, Master student, Cosmic Structure Formation Group, ETH.
2017 - 2021 Saeed Sarpas, PhD student, Cosmic Structure Formation Group, ETH.
2016 - 2020 Gabriele Pezzulli, Postdoc, Cosmic Structure Formation Group, ETH.
2016 - 2021 Ann-Christine Vossberg, PhD student, Cosmic Structure Formation Group, ETH.
2015 - 2020 Raffaella Anna Marino, Postdoc, ETH (w/Lilly).
2015 - 2020 Sofia Gallego, PhD student, ETH (w/Lilly).
2014 - 2018 Camille Leibler, PhD student, UCSC → industry.
2013 - 2017 Laura C. Keating, PhD student, IoA, Cambridge (w/Haehnelt) → Postdoc, CITA.
2012 - 2016 Elena Borisova, PhD student, ETH (w/Lilly) → Postdoc, Paul Scherrer Institute.

2012 - 2015 Fabrizio Arrigoni-Battaia, PhD student, MPIA (w/Hennawi) → ESO Fellow.

2011 - 2014 Michele Compostella, PhD student, AIfA Bonn (w/Porciani) → Postdoc, MPA.

PROFESSIONAL ACTIVITIES

Member: **Executive Board**, MUSE Consortium and GTO Team [2019-2024].

Executive Board, Institute for Particle Physics and Astrophysics (IPA), ETH Zurich [2016-2020].

Master Admission Committee, Department of Physics, ETH Zurich (2019).

Prize Selection Committee, Swiss Academy of Science Schäfli Prize 2019.

Advisor: Study Advisor of the International Master in Astrophysics and Space Physics, University of Milan Bicocca [2021-2024].

Organizer: IPA Colloquium 2019.

Referee: Nature, Astronomy & Astrophysics, Astrophysical Journal, and MNRAS. External referee for 1 PhD thesis at the University of Rome (2018).

Panels: HST Time Allocation Panel Cycle 22; reviewer for the Chinese Telescope Access Program (TAP).

CONFERENCE AND SCHOOL ORGANIZATION

2024 *What matter(s) around galaxies 2024*, **Chair**, Varenna (IT).

2022 *What matter(s) around galaxies 2022*, SOC, Champoluc (IT).

2019 *What matter(s) between galaxies: unraveling the knots in the Cosmic Web*, **Chair**, Spineto (IT).

2017 *What matter(s) around galaxies: resolving the small-scale physics of the circumgalactic medium*, **co-Chair**, Durham (UK).

2017 *The Snowbird Cosmic Ly α workshop*, SOC, Snowbird Utah (US).

2016 *46th Saas Fee Advanced Course: Ly α as an astrophysical and cosmological tool*, **co-Chair**, Le Diableret (CH).

2012 *European Week of Astronomy and Space Science (EWASS)*, SOC, Rome (IT).

2011 *New Horizons for High Redshift*, SOC, Cambridge (UK).

INVITED CONFERENCE TALKS AND REVIEWS (SELECTED) [**>35**]

2025 *International Workshop on Galaxy Formation + AGORA in Asia 2025*, Osaka (Japan).

2024 *Baryons Beyond Galactic Boundaries 2024*, Pune (India).

2024 *CGM-Chile 2024: Resolving the Circumgalactic Medium and its Impact on Galaxy Evolution*, Santa Cruz (Chile)

2024 *Santa Cruz Galaxy Workshop*, Santa Cruz (USA).

2024 *First Structures in the Universe 2024*, Paris (FR), **Review**

2024 *Co-evolution of galaxies and their large-scale environment*, Hangzhou (China).

2023 *First Structures in the Universe 2023*, **Review**

2023 *Santa Cruz Galaxy Workshop*, Santa Cruz (USA).

2023 *The Multiphase Circumgalactic Medium*, Ringberg (DE).

2022 *HACK100: Past, Present and Future of Astrophysical Spectroscopy*, Trieste (IT), **Review**

2020 *BlueMUSE Science Workshop*, online meeting.

2019 *Joint Australia-ESO conference: Linking galaxies from the epoch of initial star formation to today*, Sydney (AU), **Review**.

- 2019 *Quasar feedback: ejecting, compressing and enriching gas at different scales*, European Week of Astronomy and Space Sciences (EWASS), Lyon (FR), **Review**.
- 2019 *The Realm of the Low Surface Brightness Universe*, International Astronomical Union (IAU) Symposium, Tenerife (SP), **Review**.
- 2019 *First Galaxies First Structures*, Paris Observatory (FR), **Review**.
- 2019 *The Cosmic Baryon Cycle - Seventh GMT Community Science Meeting*, San Diego (US).
- 2019 *The Circum-Galactic Medium*, Berlin (DE).
- 2019 *Santa Cruz Workshop on Galaxy Formation*, Santa Cruz (US).
- 2018 *Tokyo Cosmic Ly α Workshop (Sakura CLAW)*, Tokyo (JP).
- 2018 *A. Wolfe Symposium in Astrophysics*, UC Santa Cruz (US) [invitation declined].
- 2017 *Challenges in Galaxy Evolution: from black holes to the Cosmic Web*, Florence (IT).
- 2017 *The Snowbird Cosmic Ly α workshop (SnowCLAW)*, Snowbird Utah (US).
- 2016 *IGM Tomography Workshop*, Kavli IPMU, Tokyo (JP).
- 2016 *Escape of Lyman radiation from galactic labyrinths*, Crete (GR).
- 2016 *Intergalactic Medium Program of Studies Winter Workshop 2016*, UC Santa Cruz (US).
- 2015 *Metal enrichment of diffuse gas in the Universe*, Sexten Center for Astrophysics (IT).
- 2015 *IGM@50: Is the InterGalactic Medium Driving Star Formation?* Spineto (IT).
- 2014 *Quenching and Quiescence*. Max Plank Institute for Astronomy, Heidelberg (DE).
- 2014 *Intergalactic Matters*. Max Plank Institute for Astronomy, Heidelberg (DE).
- 2014 *The Impact of Gas Fueling, Quenching, and Feedback on the Growth of Galaxies*, University of Notre-Dame, IN (US) [invitation declined].
- 2013 *Nordita Program 2013: Lyman α emission as astrophysical tool*. Stockholm (SE).
- 2013 *Intergalactic Interaction: A Higgs Centre Workshop on the IGM*. Edinburgh (UK).
- 2013 *CGM-Galaxy Interface Workshop*. Leiden (NL).

INVITED SEMINARS AND COLLOQUIA (SELECTED) [>50]

- 2024 *OAPd Seminar*. Padua Observatory, Padua (IT).
- 2024 *OATs Seminar*. Trieste Observatory, Trieste (IT).
- 2019 *Swinburne Astrophysics Colloquium*. Swinburne University, Melbourne (AU).
- 2019 *University of Melbourne Astrophysics Colloquium*. University of Melbourne (AU).
- 2019 *University of California Irvine Astrophysics Seminar*. Irvine (US).
- 2019 *Scuola Normale Superiore Astrophysics Seminar*. Scuola Normale Superiore Pisa (IT).
- 2018 *INAF/Arcetri Observatory Seminar*. INAF/Arcetri, Florence (IT).
- 2017 *CASS Astrophysics Seminar*. University of California, San Diego (US).
- 2017 *IfA Colloquium*. Institute for Astronomy, University of Hawaii (US).
- 2017 *SFB956 Colloquium - Conditions and Impact of Star Formation*. AIfA Bonn (DE).
- 2017 *UiO Cosmology Seminar*. Institute of Theoretical Astrophysics, Oslo (NO).
- 2017 *Stockholm University Astronomy Seminar*. Stockholm (SE).
- 2017 *INAF/OABO Astrophysics Seminar*. Astronomical Observatory, Bologna (IT).
- 2017 *Leiden Astrophysics Colloquium*. Leiden Observatory (NL).
- 2017 *Institute of Astronomy, Cambridge Colloquium*. IoA, Cambridge (UK).
- 2017 *UCL Astrophysics Seminar*. University College London (UK).
- 2017 *OAB Astronomy Seminar*. INAF Astronomical Observatory Brera, Milan (IT).

- 2016 *UCSC Astronomy Colloquium*. University of California, Santa Cruz (US).
- 2016 *Durham Astronomy Seminar*. Durham University (UK).
- 2016 *OBSGE and LASTRO Seminar*. Geneva Observatory (CH).
- 2016 *UCSB Astrophysics Seminar*. University of California, Santa Barbara (US).
- 2016 *KIPC Friday Seminar*. University of Chicago (US).
- 2015 *OAR Astrophysics Seminar*. INAF Astronomical Observatory Rome (IT).
- 2015 *Theoretical Astrophysics Seminar*. University of Zurich (CH).
- 2014 *High Energy and Astrophysics Seminar*. University of Utah, Salt Lake City (US).
- 2014 *CASS Astrophysics Seminar Series*. University of California, San Diego (US).
- 2014 *Astrophysics Colloquium*. MIT, Boston (US).
- 2014 *UC Davis Cosmology Seminar*. University of California, Davis (US).
- 2013 *UCSB Astrophysics Seminar*. University of California, Santa Barbara (US). (USA).
- 2013 *Imperial College Astrophysics Seminar series*. Imperial College, London (UK).
- 2013 *Leiden Observatory Lunch talks*. Leiden Observatory (NL).
- 2012 *TAC Seminar series*. University of California, Berkeley (US).
- 2011 *AIP Colloquium*. AIP, Potsdam (DE).
- 2011 *Astrophysics Seminar Series*. Racah Institute of Physics, Jerusalem (IL).
- 2010 *OATS Seminar Series*. INAF Astronomical Observatory, Trieste (IT).
- 2009 *Royal Observatory Edinburgh Astrophysics Seminar*. Royal Edinburgh (UK).
- 2009 *Durham Astronomy Seminars*. Institute for Computational Cosmology, Durham (UK).
- 2009 *MPIfR Colloquia*. Max Plank Institute for Radioastronomy, Bonn (DE).

OUTREACH (SELECTED)

- 2018 High school visits: design and overall organization of the activities at the Institute for Particle Physics and Astrophysics, ETH Zurich.
- 2018 Press Release: "Lighting up Dark Galaxies".
- 2016 Press Release (eso1638): "Unexpected giant glowing halos around distant quasars".
- 2014 Press Release: "Distant quasar illuminates a filament of the Cosmic Web". Press interviews included: Nature News, Science News, New Scientist, PhysicsWorld.
- 2012 Invited public lecture. San Mateo County Astronomical Society (San Mateo, USA)
- 2012 Invited public lecture. Tri-Valley Stargazers Astronomical Society (Livermore, USA).
- 2012 Press Release (eso1228): "Dark Galaxies of the Early Universe Spotted for the First Time". Press interviews included: Time, CNN, National Geographic, Kavli Foundation.

LANGUAGE SKILLS

English (fluent). Italian (native speaker). German (basic). French (basic).