



Andrea Bolamperti

Short Curriculum Vitae

University of Padua
Department of Physics and Astronomy
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Education

2021

(ongoing) PhD in Astronomy, University of Padua, Padua, Italy. Working on "*High-redshift lensed star-forming regions and their contribution to galaxy evolution*" (Adviser: Anita Zanella, Co-adviser: Claudio Grillo)

2019
2021

Master's degree in Physics, University of Milan (marks: 110/110 cum laude), Milan, Italy. "*Breaking the mass-sheet degeneracy in cluster lensing models with galaxy scaling relations*" (Adviser: Claudio Grillo, Co-adviser: Amata Mercurio.)

2015
2018

Bachelor's degree in Physics, University of Milan, Milan, Italy. "*Measuring the total mass profile of the very massive strong lens galaxy SDSS J0100+1818*" (adviser: Claudio Grillo).

Fellowships, grants and awards

2023

20 k€ Mini Grant Ricerca Fondamentale INAF, co-I (4 k€ assigned), "*Clumps at cosmological distance: revealing their formation, nature, and evolution*", PI: F. Calura, duration: 2 years

2022

(ongoing) Research studentship (1 year), European Southern Observatory (ESO), Garching bei München, Germany. Working on "*Measuring the polarization fraction and profile for a clumpy star-forming galaxy at $z = 3.4$* " (ESO supervisor: Joël Vernet, home-university supervisor: Anita Zanella)

Professional experience/observing time

2023

2.5 hours (ERIS) as col (PI: A. Zanella), Investigating the kinematics of star-forming clumps at high-redshift

2023

Scientific Assistant in the support of the Observing Programmes Committee (OPC) 112

2023

39 hours (X-Shooter) as PI, Exploring a candidate Population III clump at $z=6.15$ and its Lyman-alpha emission, cycle 111.

2022

2 hours (ERIS SV program) as col (PI: A. Zanella), Investigating the kinematics of star-forming clumps at high-redshift

2022

5 hours (MUSE) as PI, The geometry of the Universe with MUSE: a rare system of three sources multiply-imaged by an ultra-massive lens galaxy, cycle 110.

2022
2023

Reviewer of 10 ESO proposals (P110), for the ESO Distributed Peer Review (DPR) paradigm, 2022

Publications

- 2023 **"UV-continuum β slopes of individual $z \sim 2 - 6$ clumps and their evolution"**, **A. Bolamperti**, A. Zanella, U. Meštrić, E. Vanzella, M. Castellano, P. Bergamini, F. Calura, C. Grillo, M. Meneghetti, A. Mercurio, P. Rosati, T. Devereaux, E. Iani, J. Vernet, MNRAS, 10.1093/mnras/stad3114, 2023
- 2023 **"The large molecular gas fraction of post-starburst galaxies at $z > 1$ "**, A. Zanella et al. (including **A. Bolamperti**), MNRAS 524, 1, 923-939, 2023
- 2023 **"An extremely metal poor star complex in the reionization era: Approaching Population III stars with JWST"**, E. Vanzella et al. (including **A. Bolamperti**), submitted to A&A, 2023
- 2023 **"Clues on the presence and segregation of very massive stars in the Sunburst Lyman-continuum cluster at $z = 2.37$ "**, U. Meštrić et al. (including **A. Bolamperti**), A&A 673, A50, 2023
- 2023 **"Reconstructing the extended structure of multiple sources strongly lensed by the ultra-massive elliptical galaxy SDSS J0100+1818"**, **A. Bolamperti**, C. Grillo, R. Cañameras, S. H. Suyu, L. Christensen, A&A 671, A60, 2023
- 2022 **"Scrutiny of a very young, metal-poor star-forming Ly α -emitter at $z \approx 3.7$ "**, E. Iani et al. (including **A. Bolamperti**), 2023MNRAS.518.5018I, 2022

Talks and Tutorials

- 2023 **"UV-continuum slopes of individual lensed clumps"**, *ESO Galaxy Evolution Coffee*, seminar. European Southern Observatory, Garching bei München, Germany, 21st September 2023.
- 2023 **"UV-continuum slopes of individual lensed clumps: an overview and some extreme cases"**, *A multi-wavelength view on globular clusters near and far: from JWST to the ELT*, Invited talk. Sexten Center for Astrophysics, Sesto, Italy.
- 2023 **"Extended surface brightness modeling of three sources strongly lensed by an ultra-massive elliptical galaxy"**, *IAUS 381: Strong gravitational lensing in the era of big data*, Otranto Castle, Otranto, Italy.
- 2023 **"The origin of the Ly α emission from the polarized spectrum of a star-forming high- z galaxy"**, *Escape of Lyman radiation from galactic labyrinths*, Orthodox Academy of Crete, Kolymbari, Crete, Greece.
- 2023 **"Measuring the polarization fraction and profile for a clumpy star-forming galaxy at $z = 3.4$ "**, *GINF: Galaxies Near and Far*, University of Padova, 11th May 2023, Padova, Italy.
- 2023 **"UV-continuum slopes of individual lensed clumps: an overview and some extreme cases"**, *ZOOMING PRIN (Zoom in Observations Of Massive clusters and INfant Galaxies)*, University of Milan, Milan, Italy.
- 2023 **"Strong gravitational lensing modeling: introduction and an example"**, *ESO Galaxy Evolution Coffee*, seminar. European Southern Observatory, Garching bei München, Germany, 12th January 2023.
- 2022 **" β slopes of high- z clumps"**, *flash talk. MIAPP workshop "Star-Forming Clumps and Clustered Starbursts across Cosmic Time"*, MIAPbP - Munich Institute for Astro-, Particle and BioPhysics, Garching bei München, Germany.

2022

"Star formation rate density of lensed clumps: an update", *ZOOMING PRIN* (Zoom in Observations Of Massive clusters and INfant Galaxies), Sexten Center for Astrophysics, Sesto, Italy.

2021

"Mass profiles of the very massive elliptical mid-redshift lens SDSS J0100+1818", *Gravitational Lensing group meeting*, Max Planck Institute for Astrophysics (MPA), Garching bei München, Germany.

2020

(ongoing) Participant and regular contributor, *Gravitational Lensing Journal Club*, University of Milan, (with 5 presentations) organized every two weeks by the galaxy cluster research group.

2021

Regular participant, *Astrometings*, Universities of Bologna, Ferrara and Milan, organized approximately every two weeks.

Organization of scientific meetings and scientific community work

2024

SOC member of the Galaxies at Crossroads: Outflows and IMF in the VLT/ELT/ALMA/JWST Era", Brno Planetarium (Czech Republic), Spring 2024 - ESO International Workshop selected for 2024 -.

2023

(ongoing) part of the organizing team of the *ESO Journal Club*, Garching, August 2023 - ongoing

2023

Student representative of the students of the "5th ESO Summer Research Programme", Garching, 3rd July -11th August 2023

2023

(ongoing) part of the organizing team of the *Galaxy Evolution Coffee*, a weekly talk about galaxies that involves researchers from the Garching campus (ESO, MPA, MPE), Garching, May 2023 - ongoing

2023

(ongoing) part of the organizing team of the *Astronomy for non Astronomers* talk, a monthly talk intended mainly for non-astronomers at ESO, European Southern Observatory, March 2023 - ongoing

2023

LOC member of the "A multi-wavelength view on globular clusters near and far: from JWST to the ELT" conference, Sexten Center for Astrophysics, 3-7 July 2023, ~ 90 participants.

2023

LOC member of the "Peer Review Under Review" conference, ESO, Garching bei München, 6-10 February 2023, ~ 130 participants.

2022

Chair of the 25th October session at the MIAPP workshop "Star-Forming Clumps and Clustered Star- bursts across Cosmic Time", Garching bei München, Germany, 25th October 2022

2022

Co-organizer of the "GINF: Galaxies Near and Far" meeting, Padova, Italy, 11 May 2022

2022

(ongoing) Organizer of the *CLUMPS (CLumps and star formation in aPart galaxieS)* meetings, a weekly journal club about high redshift galaxies and their star-forming regions, attended by researchers in Italy, Germany and the Netherlands, 2022 - ongoing

Conferences

2023

A multi-wavelength view on globular clusters near and far: from JWST to the ELT, sexten-cfa.eu/event/a-multi-wavelength-view-on-globular-clusters-near-and-far-from-jwst-to-the-elt/, Sexten Center for Astrophysics, 3-7 July 2023 (invited talk)

2023

IAUS 381: Strong gravitational lensing in the era of big data, hrsastro.github.io/, Otranto Castle, 19-23 June 2023 (contributed talk)

2023

Escape of Lyman radiation from galactic labyrinths, ias-tro.pt/research/conferences/lyman2023/, Kolymbari, Crete, Greece., 18-21 April 2023 (contributed talk)

2023

ZOOM PRIN (Zoom in Observations Of Massive clusters and INfant Galaxies), zooming-prin-workshop/, University of Milan, 24-26 January 2023 (contributed talk)

2022

Invited participant of the MIAPP workshop "Star-Forming Clumps and Clustered Starbursts across Cosmic Time", <https://www.munich-iapbp.de/star-formation2022>, Garching bei München, Germany, 4-28 October 2022 (brief presentation+chair session)

2022

ZOOM PRIN (Zoom in Observations Of Massive clusters and INfant Galaxies), sexten-cfa.eu/event/zooming-into-dark-matter-and-proto-galaxies-with-gravitational-lensing/, Sexten Center for Astrophysics, 18-22 July 2022 (contributed talk)

2022

DAWN Winter School, indico.nbi.ku.dk/event/1607, accepted for attending at the Cosmic Dawn Center (Copenhagen), later moved to be fully online, 7-11 February 2022

2021

ZOOM PRIN (Zoom in Observations Of Massive clusters and INfant Galaxies), Ferrara - IUSS, 5-8 October 2021 (participant)

2021

A Multi-Wavelength View of Galaxy Clusters: Deriving Masses In The Era Of Wide-Field Surveys, cosmos.esa.int/web/cluster-mass-2020, European Space Agency (ESA), by remote, 6-9 September 2021 (participant)

2021

Six week summer webinar series on the growth of structure over cosmic time, growthofstructure.sites.ucsc.edu, by remote, June-July 2021 (participant)

2018

The Universe as a telescope: probing the cosmos at all scales with strong lensing, sites.google.com/site/lensing2018, Milan, 3-7 September 2018 (participant)

Scientific visits

2021

Max Planck Institute for Astrophysics (MPA), Garching bei München, Germany, October 2021: 1 week visit, invited by S.H.Suyu

Skills

Programming	Python (Matplotlib, NumPy, AstroPy, Pandas, SciPy, emcee), C++ (advanced);
Data reduction	esorex, esoReflex (MUSE, X-Shooter, FORS2 pmos)
Markup	L ^A T _E X, Markdown
Programs & softwares	GLEE, glafic, GALFIT, pPXF, aphot, BPASS (good/advanced) EAZY, BAGPIPES (basic)
Data handling	SAOImageDS9, TopCat, fv FitsViewer, QFitsView

Languages

Italian Native

English	advanced (B2/C1)	<i>Level 2 Certificate in ESOL International</i> - Trinity College London
Spanish	pre-intermediate (A2/B1)	
German	beginner (A1)	lingo-art.de Zertifikat

Extra

First AID course certificate - Bayerische Rotes Kreuz

last update: October 13, 2023

