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

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 coI (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 coI (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 Lyα-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 Lyα 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, *Astromeetings*, 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, $\sim$ 90 participants.

2023 LOC member of the "Peer Review Under Review" conference , ESO, Garching bei München, 6-10 February 2023, $\sim$ 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**, *iastro.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	LaTeX, 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)	*Level 2 Certificate in ESOL International* - Trinity College London
Spanish	pre-intermediate (A2/B1)	
German	beginner (A1)	lingo-art.de Zertifikat

Extra

First AID course certificate - Bayerische Rotes Kreuz

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