

Anna Niemiec

LPNHE
4 place Jussieu
75005 Paris, France
☎ +33678146899
✉ anna.niemiec@lpnhe.in2p3.fr
📄 [annaniemiec.github.io](https://github.com/annaniemiec)

Research Experience

- 2022-present **Postdoctoral researcher**, LPNHE, France.
 - **Advisors:** Pierre Antilogue, Pierre Astier
- 2020–2022 **Postdoctoral researcher**, Durham University, UK.
 - **Advisor:** Mathilde Jauzac
- 2018–2020 **Postdoctoral researcher**, University of Michigan, USA.
 - **Advisor:** Keren Sharon
- 2014–2017 **PhD**, Laboratoire d'Astrophysique de Marseille, France.
 - **Thesis:** Influence of the environment on galaxy evolution
 - **Advisors:** Eric Jullo and Marceau Limousin
- 2013–2014 **Research Internship**, Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro - Brasil.
 - **Thesis:** Strong lensing in the CS82 survey
 - **Advisor:** Martin Makler

Education

- 2014–2017 **PhD in "Astrophysics and Cosmology"**, awarded on 28/09/2017, Laboratoire d'Astrophysique de Marseille/Aix Marseille Université, France.
- 2012–2013 **Masters (2nd y.)**, Université Paris VI (UPMC), France.
Noyaux, Particules, Astroparticules et Cosmologie (NPAC), cosmology specialty
- 2011–2012 **Masters (1st y.)**, Ecole Normale Supérieure de Cachan, France.
Theoretical and experimental physics
- 2010–2011 **Bachelor**, Ecole Normale Supérieure de Cachan, France.
Science and Technology, physics specialty

Teaching & Supervision

- 2021-present Co-supervision of a PhD student project at Durham University
- 2020–2022 Demonstrator for physics labs (Durham University, UK)
- 2019 Supervision of an undergraduate research project « Mass segregation of satellite galaxies in the TNG simulation » (University of Michigan, USA)
- 2014–2017 As a teaching assistant: practicals in Wave optics, Electronics, Geometric optics and Mathematics (Aix-Marseille Université, France)

Service to the community

Referee for MNRAS, A&A, ApJ

HST Time Allocation Committee panelist

Institutional responsibilities

- 2023 Co-organizer of the lab seminars at LPNHE
- 2019 Organizer of the "Galaxy cluster seminars" at University of Michigan
- 2015–2017 Organizer of the "Tea Time Chat" meetings at LAM

Organization of scientific meetings

- Jul 2022 National Astronomy Meeting (NAM) parallel session "Probing dark matter and baryons with galaxy clusters" - SOC
- Apr 2022 BUFFALO collaboration meeting at the Laboratoire d'Astrophysique de Marseille (France) - SOC
- Jun 2021 SF2A days parallel session "From galaxies to the cosmic web: baryons and dark matter" - SOC
- Jun 2020 BUFFALO collaboration meeting (online) - SOC
- Feb 2019 BUFFALO meeting at University of Nevada Las Vegas (UNLV) - SOC
- Oct 2018 BUFFALO meeting at the Laboratoire d'Astrophysique de Marseille (France)
- Jul 2017 Galaxy Clusters Across Cosmic Time Conference (Aix-en-Provence - France)

Collaboration memberships

- BUFFALO : co-Lead of the Mass Modeling Working group
- LSST DESC member
- UNIONS collaboration member
- Euclid consortium member
- ISSI International Team "Cluster Physics from space to reveal Dark Matter: current and future challenges" member

Outreach and Communication

- 2020-present Series of outreach videos on youtube (<https://www.youtube.com/channel/UCnNZKXnA11CWGe9KaKrRofA>)
- 2019 Co-organizer of "Astronomy on Tap" events, Ann Arbor, USA
- 11/2017 Public communication in "Lettre d'AMU", thesis works, France (https://www.univ-amu.fr/system/files/2019-02/DIRCOM-lettre_amu_n55_novembre2017_0.pdf p.26)
- 05/2017 Public lecture, "13 Minutes Jeunes Chercheurs", France (<https://vimeo.com/243808833>)
- 2014–2016 Facilitator at the "Fete de la science", LAM, France
- 2014–2015 Organizer of a series of astronomy workshops for inmates at Marseille's prison, France

Skills

- Programming Python, C, Bash, MCMC, Python/C binding

Software Lenstool, DS9, Topcat, SExtractor, git, pyRRG
Languages French (native), Polish (native), English (advanced), Spanish (basic knowledge)

Oral Presentations

Invited talks.

2022	Extragalactic/cosmology seminar at UCL (London, UK)	<i>Seminar</i>
2020	Atelier Amas France (online)	<i>Workshop</i>
2020	EAS Symposium S4 (online)	<i>Conference</i>
2020	GCCL online seminars	<i>Seminar</i>
2019	St Mary's University (Halifax - Canada)	<i>Seminar</i>

Contributed talks.

2022	EAS (Valencia, Spain)	<i>Conference</i>
2021	National Astronomy Meeting UK (online)	<i>Conference</i>
2021	EAS (online)	<i>Conference</i>
2021	DEX XVII (online)	<i>Conference</i>
2020	Euclid UK meeting (online)	<i>Collaboration meeting</i>
2019	Matera Oscura (Matera - Italy)	<i>Conference</i>
2019	Great Lakes Cosmology Workshop (Rochester, NY - USA)	<i>Workshop</i>
2019	Société Française d'Astronomie (SF2A) days (Nice - France)	<i>Workshop</i>
2019	Lenstool days (Lyon - France)	<i>Workshop</i>
2019	Durham University (UK)	<i>Talk</i>
2017	Large Scale Structures Workshop (Granada - Spain)	<i>Workshop</i>
2017	Galaxy Clusters Across Cosmic Time (Aix-en-Provence - France)	<i>Conference</i>
2017	Galaxy Clusters conference (Santander - Spain)	<i>Conference</i>
2016	eBOSS-DESI France meeting (Paris - France)	<i>Collaboration meeting</i>
2016	GravLens (Leiden, the Netherlands)	<i>Conference</i>
2016	Astronomical Data Analysis Summer School (Chania - Grece)	<i>Workshop</i>
2016	eBOSS meeting (EPFL - Switzerland)	<i>Collaboration meeting</i>
2015	MultiDarkLens meeting (Marseille - France)	<i>Collaboration meeting</i>
2015	SDSS meeting (Madrid - Spain)	<i>Collaboration meeting</i>

Publications: 14 publications, 5 as 1st author, + 1 in prep.

Submitted.

A. Niemiec, M. Jauzac, D. Eckert, D. Lagattuta, K. Sharon, A. Koekemoer, K. Umetsu, A. Acebron, J. M. Diego, D. Harvey, E. Jullo, V. Kokorev, M. Limousin, G. Mahler, P. Natarajan, M. Nonino, C. Steinhardt, S.-I. Tam, A. Zitrin. *BUFFALO: a high-resolution strong+weak-lensing view of Abell 370*. Submitted to MNRAS.

Published, 15 publications, 5 as 1st author.

- 1 D. J. Lagattuta, J. Richard, F. E. Bauer, C. Cerny, A. Claeysens, L. Guaita, M. Jauzac, A. Jeanneau, A. M. Koekemoer, G. Mahler, G. Prieto Lyon, A. Acebron, M. Meneghetti, **A. Niemi**, A. Zitrin, M. Bianconi, T. Connor, R. Cen, A. Edge, A. L. Faisst. *Pilot-WINGS: An extended MUSE view of the structure of Abell 370*. MNRAS, Volume 514, p. 497, July 2022.
- 2 **A. Niemi**; C. Giocoli; E. Cohen; M. Jauzac; E. Jullo and M. Limousin. *Scatter in the satellite galaxy SHMR: fitting functions, scaling relations and physical processes from the IllustrisTNG simulation*. MNRAS, Volume 512, p. 6021, June 2022.
- 3 A. Ghosh; L. R. Williams; J. Liesenborgs; A. Acebron; M. Jauzac; A. M. Koekemoer; G. Mahler; **A. Niemi**; C. Steinhardt; A. L. Faisst; D. Lagattuta and P. Natarajan. *Further support for a trio of mass-to-light deviations in Abell 370: free-form GRALE lens inversion using BUFFALO strong lensing data*. MNRAS, Volume 506, p. 6144, October 2021.
- 4 J. D. Remolina González; K. Sharon; G. Mahler; C. Fox; C. A. Garcia Diaz; K. Napier; L. E. Bleem; M. D. Gladders; N. Li and **A. Niemi**. *Core Mass Estimates in Strong Lensing Galaxy Clusters: A Comparison between Masses Obtained from Detailed Lens Models, Single-halo Lens Models, and Einstein Radii*. ApJ, Volume 920, Issue 2, October 2021.
- 5 J. D. Remolina González; K. Sharon; N. Li; G. Mahler; L. E. Bleem; M. Gladders and **A. Niemi**. *Core Mass Estimates in Strong Lensing Galaxy Clusters Using a Single-Halo Lens Model*. ApJ, Volume 910, Issue 2, April 2021.
- 6 J. D. Remolina Gonzalez, K. Sharon, B. Reed, N. Li, G. Mahler, L. E. Bleem, M. Gladders, **A. Niemi**, A. Acebron, and H. Child. *Efficient Mass Estimate at the Core of Strong Lensing Galaxy Clusters Using the Einstein Radius*. ApJ, Volume 902, p. 44, October 2020.
- 7 **A. Niemi**, M. Jauzac, E. Jullo, M. Limousin, K. Sharon, J.-P. Kneib, P. Natarajan, J. Richard. *hybrid-Lenstool: A self-consistent algorithm to model galaxy clusters with strong- and weak-lensing simultaneously*. MNRAS, Volume 493, p. 3331-3340, April 2020.
- 8 C. L. Steinhardt, M. Jauzac, A. Acebron, H. Atek, P. Capak, I. Davidzon, D. Eckert, D. Harvey, A. M. Koekemoer, C. D. P. Lagos, G. Mahler, M. Montes, **A. Niemi**, M. Nonino, P. A. Oesch, J. Richard, S. A. Rodney, M. Schaller, K. Sharon, L.-G. Strolger, ... *The BUFFALO HST Survey*. ApJS, Volume 247, p. 64, April 2020.
- 9 E. J. Gonzalez, M. Chalela, M. Jauzac, D. Eckert, M. Schaller, D. Harvey, **A. Niemi**, A. M. Koekemoer, D. Barnes, D. Clowe, T. Connor, J. M. Diego, J. D. Remolina Gonzalez, C. L. Steinhardt. *Setting the scene for BUFFALO: A study of the matter distribution in the HFF galaxy cluster MACS J0416.1-2403 and its parallel field*. MNRAS, Volume 494, p. 349-362, March 2020.
- 10 **A. Niemi**, E. Jullo, C. Giocoli, M. Limousin and M. Jauzac. *Dark matter stripping in galaxy clusters: a look at the Stellar to Halo Mass relation in the Illustris simulation*. MNRAS, Volume 487, Issue 1, p.653-666. July 2019.
- 11 **A. Niemi**, E. Jullo, A. Montero-Dorta, F. Prada, S. Rodriguez-Torres, E. Perez and A. Klypin. *Probing galaxy assembly bias with LRG weak lensing observations*. MNRAS: Letters, Volume 477, Issue 1, p.L1-L5, June 2018.

- 12 A. Montero-Dorta, E. Pérez, F. Prada, S. Rodríguez-Torres, G. Favole, A. Klypin, R. Cid Fernandes, R. M. González Delgado, A. Domínguez, A. S. Bolton, R. García-Benito, E. Jullo, **A. Niemi**. *The Dependence of Galaxy Clustering on Stellar-mass Assembly History for LRGs*. The Astrophysical Journal Letters, Volume 848, Issue 1, article id. L2, October 2017.
- 13 **A. Niemi**, E. Jullo, M. Limousin, C. Giocoli, T. Erben, H. Hildebrandt, J.-P. Kneib, A. Leauthaud, M. Makler, B. Moraes, M. E. S. Pereira, H. Shan, E. Rozo, E. Rykoff and L. Van Waerbeke. *Stellar-to-halo mass relation of cluster galaxies*. MNRAS, Volume 471, p.1153-1166, October 2017.
- 14 G. Favole, J. Comparat, F. Prada, G. Yepes, E. Jullo, **A. Niemi**, J.-P. Kneib, S. A. Rodríguez-Torres, A. Klypin, R. A. Skibba, C. K. McBride, D. J. Eisenstein, D. J. Schlegel, S. E. Nuza, C. H. Chuang, T. Delubac, C. Yèche and D. P. Schneider. *Clustering properties of g-selected galaxies at $z \sim 0.8$* . MNRAS, Volume 461, Issue 4, p.3421-3431, October 2016.
- 15 F. Abe, C. Airey, E. Barnard, J. Baudrey, C. Botzler, D. Douchin, M. Freeman, P. Larsen, **A. Niemi**, Y. Perrott, L. Philpott, N. Rattenbury and P. Yock. *Extending the Planetary Mass Function to Earth Mass by Microlensing at Moderately High Magnification*. MNRAS, Volume 431, p.2975-2985, June 2013.

References

Pierre Antilogus, *LPNHE*, France.

- pierre.antilogus@lpnhe.in2p3.fr
- +33 1 44 27 41 54

Eric Jullo and Marceau Limousin, *Laboratoire d'Astrophysique de Marseille*, France.

- 38 Rue Frédéric Joliot Curie, 13013 Marseille, France
- eric.jullo@lam.fr and marceau.limousin@lam.fr

Keren Sharon, *University of Michigan*, USA.

- 301D West Hall, 1085 S. University, Ann Arbor, MI 48109, USA
- kerens@umich.edu

Mathilde Jauzac, *Durham University*, UK.

- Centre for Extragalactic Astrophysics, Physics Department, South Road, DH1 3LE Durham, UK
- mathilde.jauzac@durham.ac.uk