

ZEFENG LI

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EDUCATION & EMPLOYMENT

Postdoctoral Research Assistant, Durham University Advisor: Mark Swinbank & Anna McLeod	Oct 2023 - present Durham, UK
Ph.D., Astronomy & Astrophysics, Australian National University Advisor: Mark Krumholz & Emily Wisnioski Thesis: <i>spatial metallicity correlations in galaxies</i>	Oct 2019 - Jul 2023 ACT, Australia
Algorithm Engineer, Cloudwalk Technology Optical Character Recognition (OCR, see the arXiv paper)	Oct 2018 - May 2019 Shanghai, China
B.S., Astronomy, Peking University Advisor: Xue-Bing Wu	Sept 2013 - Jul 2017 Beijing, China

VISITING EXPERIENCES

Undergraduate Visiting Research, University of Arizona Advisor: Ian McGreer & Xiaohui Fan	Mar 2016 - Jul 2016 Tucson, the United States
Summer Research, Australian National University Advisor: Christian Wolf & Fuyan Bian	Oct 2017 - Jan 2018 ACT, Australia

CONFERENCES & TALKS

TBD, Metal Production and Distribution in a Hierarchical Universe II	Santiago, Nov, 2023
Seminar talk at SHAO	Shanghai, Sept, 2023
Seminar talk at NJU	Nanjing, Sept, 2023
Seminar talk at UWA / ICRAR	Perth, April, 2023
Attendee, Wide-Field Spectroscopy vs Galaxy Formation Theory	Tucson, Mar 2023
Attendee, CSST workshop	Beijing, Jul 2022
Poster, From Stars to Galaxies II	Gothenburg, Jun 2022
Oral talk, star formation group meeting at Shanghai Astronomical Observatory	Shanghai, Jan, 2022
E-poster, KIAA Forum on Gas in Galaxies	Beijing, Nov 2021
E-poster, MOS-Galaxy STScI workshop	Baltimore, May 2021
Oral talk, Annual Conference of the Chinese Astronomical Society	Wuhan, Nov 2016

PROFESSIONAL EXPERIENCE

Team

- MUSE and ALMA Unveiling the Virgo Environment (MAUVE): member

- Spatial variations of a metal field in the disk settling epoch (ERIS proposal): Co-I
- DECODE, a Dynamical Exploration of CO in Discs in the Early universe (ALMA proposal): Co-I
- Resolving the 870 μm dust emission in high-redshift SMGs (ALMA proposal): Co-I
- Constraining the evolution of star-forming regions in high-redshift galaxies (HST proposal): Co-I

Computation

- Python packages ADABIN (adaptive binning) and METCORR (two-point correlation computation)
- Enterprise-class machine learning / deep learning (convolutional neural network)

Observation

- 6-m class telescope (Multiple Mirror Telescope): 5 nights
- 2-m class telescope (Bok Telescope, Siding Spring 2.3m Telescope): 18 nights

AWARDS

RSAA HDR travel fund (A\$5,000)	Australian National University, Dec 2022
ASTRO 3D travel fund (A\$3,000 in total)	Australian National University, Dec 2022
Vice Chancellor travel fund (A\$1,500)	Australian National University, Dec 2022
Summer Research Scholarship (A\$2,000)	Australian National University, Oct 2017
Weiming Scholarship for outstanding thesis (top 10%)	Peking University, Jul 2017
Lin-Qiao Scholarship for outstanding undergraduate research (top 20%)	Peking University, Oct 2016
Shenkeqi Scholarship (top 30%)	Peking University, Sept 2014

PUBLICATIONS

All the published papers can be found in [my ORCID homepage](#), among which astronomy-related refereed papers can be found in [the ADS library](#) (**h-index = 9, 258 citations in total**).

First-author (4 papers in total):

Li, Z., Grand, R. J. J., Wisnioski, E., Mendel, J. T., Krumholz, M. R., Ting, Y.-S., Ciucă, I. 2023, in preparation

Metallicity correlations in Auriga simulations

Li, Z., Wisnioski, E., Mendel, J. T., Krumholz, M. R., Kewley, L. J., López-Cobá, C., Sánchez, S. F., Anderson, J. P., Galbany, L. 2023, [MNRAS](#), 518, 286 (1 citations)

Spatial metallicity distribution statistics at ~ 100 pc scales in the AMUSING++ nearby galaxy sample

Li, Z., Krumholz, M. R., Wisnioski, E., Mendel, J. T., Kewley, L. J., Sánchez, S. F., Galbany, L. 2021, [MNRAS](#), 504, 5496 (11 citations)

Detection of metallicity correlations in 100 nearby galaxies

Li, Z., McGreer, I. D., Wu, X.-B., Fan, X., Yang, Q. 2018, [ApJ](#), 861, 6 (12 citations)

The Ensemble Photometric Variability of Over 10^5 Quasars in the Dark Energy Camera Legacy Survey and the Sloan Digital Sky Survey

Co-author (12 papers in total):

Chen, Q.-H. + 6 authors + **Li, Z.** + 3 authors, 2023, in preparation

Zhu, Z., Campbell, I. H., Allen, C. M., **Li, Z.** 2023, [Geochimica et Cosmochimica Acta](#), 346, 133

Di, Y., **Li, Z.**, Amelin, Y. 2021, [Journal of Analytical Atomic Spectrometry](#), 36: 1489-1502

Kinemuchi, K. + 18 authors + **Li, Z.** + 11 authors 2020, [ApJS](#), 250, 10

Di, Y. + 2 authors + **Li, Z.** + 2 authors 2020, [American Mineralogist](#), 105 (2): 149-161

Wolf, C. + 5 authors + **Li, Z.** + 2 authors 2020, [MNRAS](#), 491, 1970

Grier, C. J. + 22 authors + **Li, Z.** + 10 authors 2019, [ApJ](#), 887, 1
Zou, H. + 25 authors + **Li, Z.** + 21 authors 2019, [ApJS](#), 245, 4
Shen, Y. + 23 authors + **Li, Z.** + 10 authors 2019, [ApJ](#), 883, 14
Zou, H. + 15 authors + **Li, Z.** + 11 authors 2017, [AJ](#), 153, 276
Wang, F. + 7 authors + **Li, Z.** + 13 authors 2017, [ApJ](#), 839, 27
Yang, J., + 11 authors + **Li, Z.**, + 3 authors 2017, [AJ](#), 153, 184