

Rui Luo

Curriculum Vitae

CSIRO Astronomy and Space Science
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Education

- 2013 - 2019 **Ph.D., Astrophysics**, *Department of Astronomy, School of Physics, Peking University, Beijing, China.*
Thesis: Measurement of the luminosity function of Fast Radio Bursts
Supervisor: Prof. Kejia Lee (KIAA-PKU)
2009 - 2013 **B.Sc., Applied Physics**, *School of Physics, Huazhong University of Science and Technology, Wuhan, China.*

Employment

- 2019 - present **Postdoctoral Fellow, Radio Astronomy**, *Astronomy and Space Science, Commonwealth Scientific and Industrial Research Organisation, Marsfield, Sydney, Australia.*

Research Interests

- Transients: Fast Radio Bursts (FRBs), Pulsars
Cosmology: Intergalactic medium, Cosmic magnetic field, Circum-galactic medium
Statistics: Bayesian Inference, MCMC
ML: Deep Neural Network

Awards

- 2013 - 2018 Second Academic Scholarship, Peking University
2016 Kwang-Hua Scholarship, Peking University
2016 Award for Scientific Research, Peking University
2015 Second Prize of Chen Huxiong Scholarship, Peking University
2014 Merit Graduate Student, Peking University
2013 Annual Scholarship of National Astronomical Observatories, Chinese Academy of Sciences

Publications

First-author and second-author papers:

- 5 **Luo, R.**, Lee, K. J., Wang, W. Y., Lorimer, D. R., Men, Y. P., & Zhang, B., *On the true FRB luminosity function*, 2019, MNRAS, to be submitted
- 4 Men, Y. P., **Luo, R.**, Chen, M. Z., Hao, L. F., Lee K. J., Li, J., Li Z. X., Liu, Z. Y., Pei, X., Wen, Z. G., Wu, J. J., Xu, Y. H., Xu, R. X., Yuan, J. P., & Zhang, C. F., *Piggyback searching for fast radio bursts using Nanshan 26m and Kunming 40m radio telescopes – I. Observing and data analysis systems, discovery of a mysterious peryton*, 2019, [MNRAS](#), **488**, 3957
- 3 **Luo, R.**, Lee, K. J., Lorimer, D. R., & Zhang, B., *On the normalised FRB luminosity function*, 2018, [MNRAS](#), **481**, 2320
- 2 Wang, W. Y., **Luo R.**, Yue, H., Chen, X. L., Lee, K. J., & Xu, R. X., *FRB 121102: A Starquake-induced Repeater?*, 2018, [ApJ](#), **852**, 140
- 1 Yang, Y.-P., **Luo, R.**, Li, Z., & Zhang, B., *Large Host-galaxy Dispersion Measure of Fast Radio Bursts*, 2017, [ApJ](#), **839**, L25

Contributed papers:

- 3 Men, Y. P., Aggarwal, K, Li, Y., Palaniswamy, D., Burke-Spolaor, S., Lee, K. J., **Luo, R.**, Demorest, P., Tendulkar, S., Agarwal, D., Young, O., & Zhang, B., *Non-detection of fast radio bursts from six gamma-rayburst remnants with a possible magnetar engine*, 2019, MNRAS, submitted
- 2 Wang, W. Y., Lu, J. G., Zhang, S. B., Chen, X. L., **Luo, R.**, & Xu, R. X., *Pulsar giant pulse: coherent instability near light cylinder*, 2019, [SCPMA](#), **62(7)**, 979511
- 1 Yi, S.-X., Cheng, K. S., & **Luo, R.**, *Clumpy jets from black hole-massive star binaries as engines of Fast Radio Bursts*, 2019, [MNRAS](#), **483**, 4197

Conferences & Talks

- 2019 FAST/Future Pulsar Symposium 8, Xi'an, China, Jun. 26-28, 2019
Contributed talk: *Measurement of the luminosity function of Fast Radio Bursts*
- 2019 Group Meeting of Cosmology Group at NAOC, Beijing, China, Mar. 27, 2019
Invited talk: Measurements on the FRB luminosity function
- 2018 KIAA Graduate Dinner Talk, Beijing, China, Dec. 18, 2018
Invited talk: *An Overview on Fast Radio Bursts and FRB luminosity function*
- 2018 FAST/Future Pulsar Symposium 7, Guangzhou, China, Jul. 4-6, 2018
- 2018 NAOC Graduate Student Seminar, Beijing, China, Apr. 23, 2018
Invited talk: *A Review of Fast Radio Bursts and FRB luminosity function*
- 2017 Radio Astronomy Forum 2017, Pingtang, China, Sep. 24-27, 2017

- Poster: *Simulating DM of host galaxies to derive FRB luminosity function*
- 2017 Pulsar Timing Array in China, Beijing, China, May 30-31, 2017
Contributed as LOC member
- 2017 FAST/Future Pulsar Symposium 6, Wuhan, China, Jun. 28-30, 2017
Contributed talk: *Simulating DM of host galaxies to derive FRB luminosity function*
- 2016 Chinese Astronomical Society 2016 Annual Meeting, Wuhan, China, Nov. 1-3, 2016
Contributed talk: *Simulating the dispersion measure of host galaxies*
- 2016 Jing-Guang-Xia Astrophysics Meeting, Xiamen, China, July 21-23, 2016
Contributed talk: *Simulating the dispersion measure of host galaxies*
- 2016 QTT Colloquium Series 2016, Zunyi, China, July 3-4, 2016
Contributed talk: *Simulating the dispersion measure of FRB host galaxies*
- 2016 PKU-XAO Bilateral Meeting, Urumqi, China, Jun. 10-13, 2015
Contributed talk: *Simulating the dispersion measure of FRB host galaxies*
- 2015 Chinese Astronomical Society 2015 Annual Meeting, Beijing, China, Oct. 19-21, 2015
Contributed talk: *Consideration of Research on FRBs*
- 2015 International Pulsar Timing Array 2015 Meeting, Parkes&Leura, Australia, July 19-31, 2015
- 2015 QTT Colloquium Series 2015, Ming'antu, China, July 2-3, 2015
Contributed talk: *Consideration of Research on FRBs*
- 2015 KIAA-SHAO Bilateral Workshop, Beijing, China, May 18-19, 2015
Contributed talk: *Consideration of FRB searching*

Observing Experience

- Jul. 2019 At Five-hundred-meter Aperture Spherical radio Telescope
Approved Proposal: Monitoring the repeating FRB candidates
- Aug. 2017 At Kunming 40-m radio telescope
Contributions: installing FRB backend and configuring FRB searching software
- Apr. 2016 At Five-hundred-meter Aperture Spherical radio Telescope
Contributions: configuring ROACH2 and monitoring frequency spectrum
- Aug. 2015 At Miyun 50-m radio telescope
Contributions: installing ROACH2 and observing pulsars.
- Oct. 2014 At Kunming 40-m radio telescope
Contributions: assisting calibration for two polarization channels of backend and observing pulsars.

Teaching Experience

- 2017 Teaching Assistant of GENERAL PHYSICS for non-physics Schools, Peking University
- 2015 Teaching Assistant of ATOMIC PHYSICS, School of Physics, Peking University

Technical Skills

Programming PYTHON (Proficient), C, C++, UNIX

Softwares MATLAB, MATHEMATICA, QT

Writing L^AT_EX, MARKDOWN

Web Design WIKI, GIT, HTML

Language

English

Professional working proficiency

Chinese

Native or bilingual proficiency

Japanese

Basic words and phrases only