

Rui Luo

Curriculum Vitae

CSIRO Astronomy and Space Science
Corner Vimiera & Pembroke Roads,
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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**, CSIRO Astronomy and Space Science & Australia National Telescope Facility, Marsfield, NSW, Australia.

Research Interests

- Radio Astro: Fast Radio Bursts (FRBs), Pulsars, Radio Frequency Interferences (RFIs)
Statistics: Bayesian Inference, MCMC
ML: Deep Neural Network

Awards

- 2019 Vela Prize in FAST/Future Pulsar Symposium 8, China
2013 - 2018 Second Academic Scholarship, Peking University
2016 Kwang-Hua Scholarship, Peking University
2015 Second Prize of Chen Huxiong Scholarship, 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 Cosmology Group Meeting 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